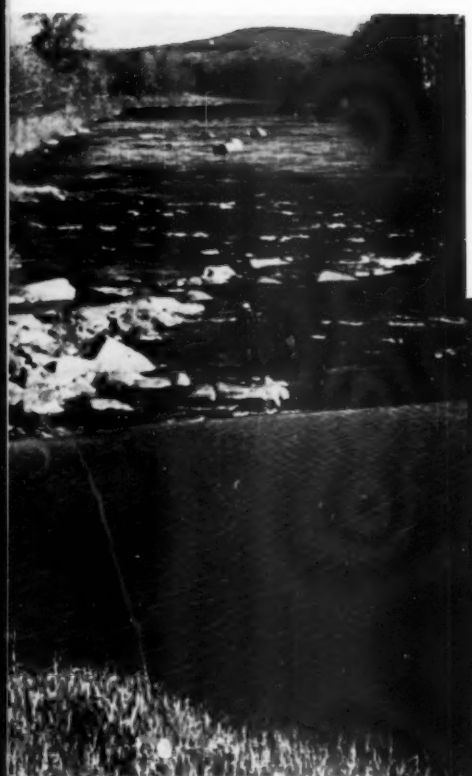
July 10, 1961

# PULP & PAPER



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as great as 300% by the total elimination of friction between the wire and the flat suction boxes previously used.

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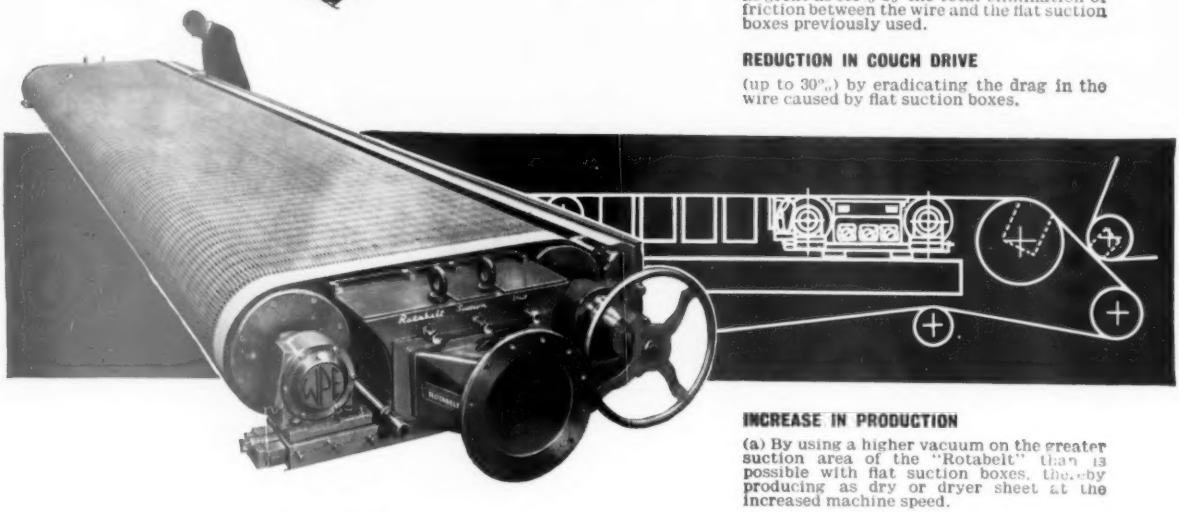

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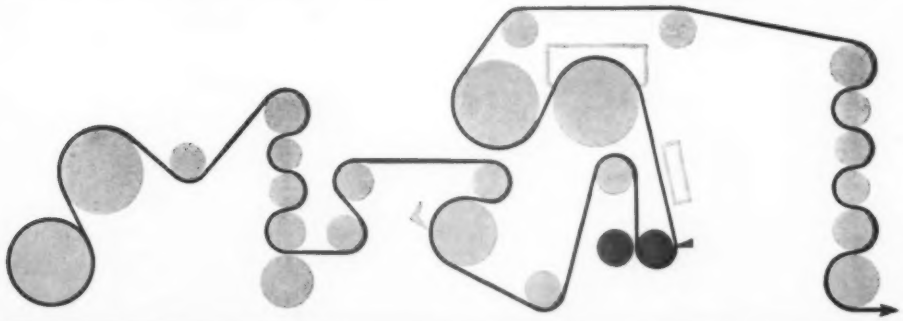

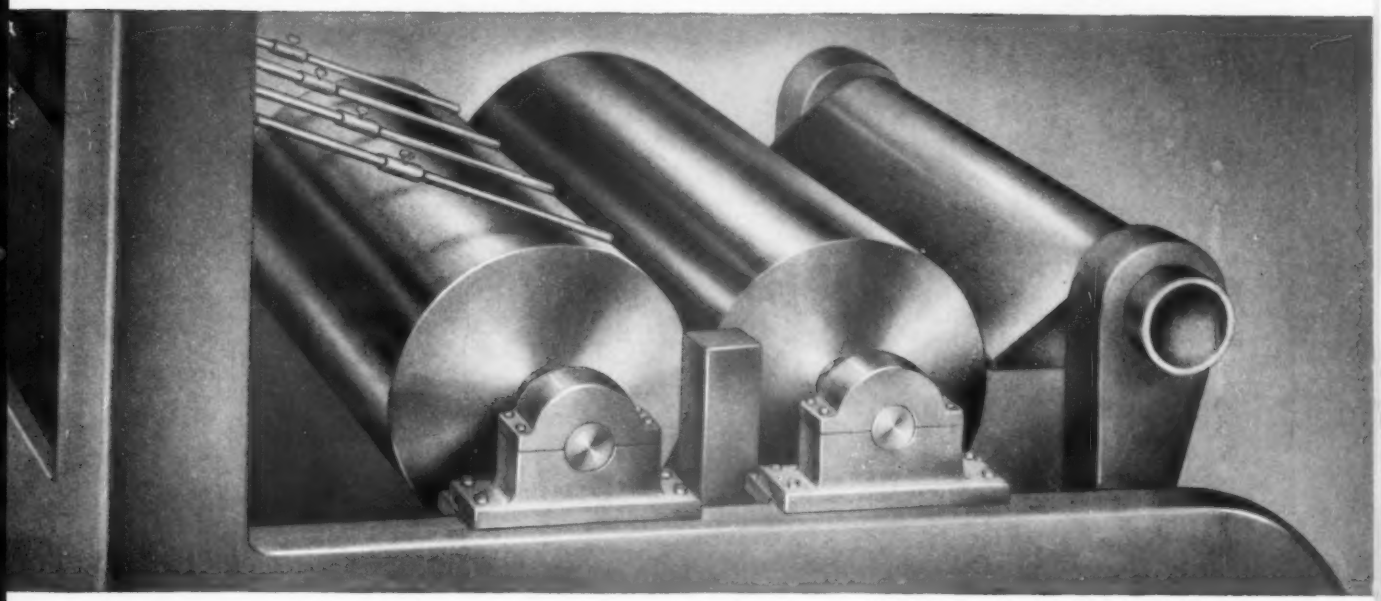

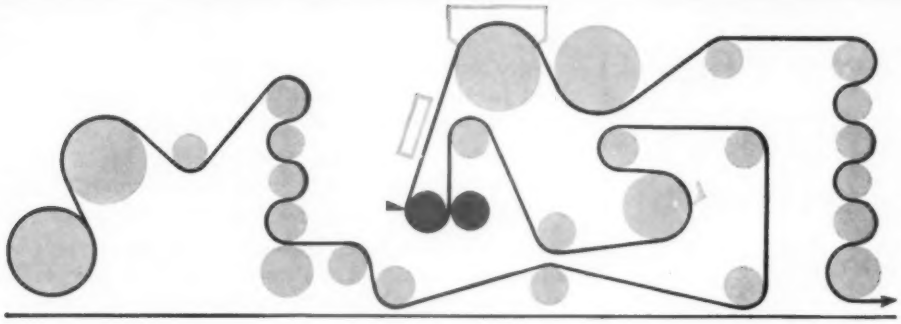

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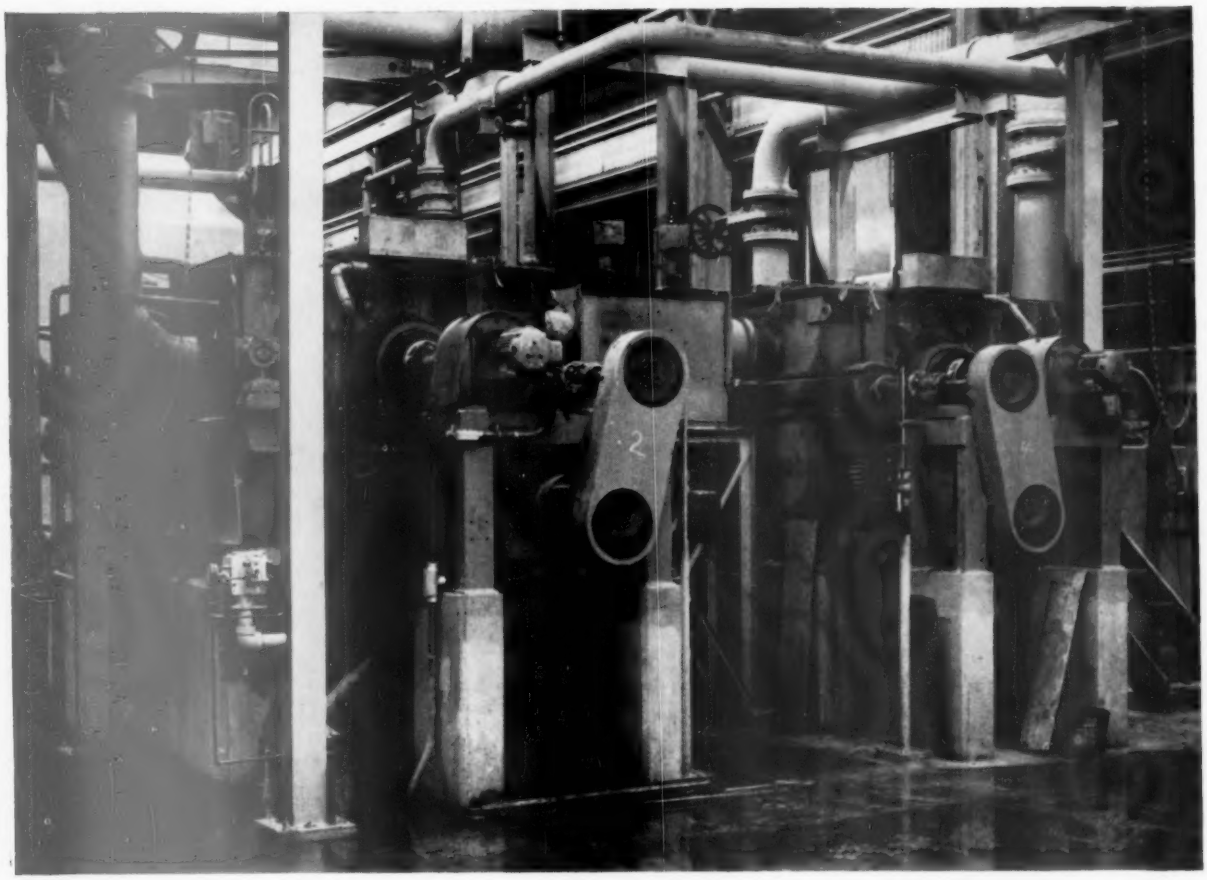

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July 10, 1961

VOLUME 35, NUMBER 14

PULP & PAPER

PUBLISHED EVERY OTHER WEEK

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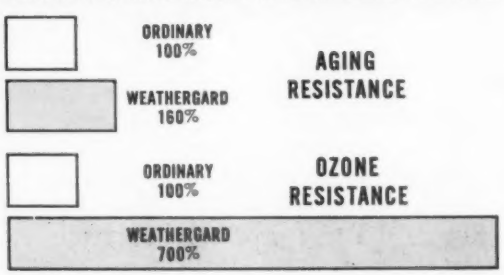
*The new WeatherGard cover is standard on all U.S. Giant Conveyor Belting at no extra cost. See your US Representative or Distributor.*

**COMPARE THE RESULTS OF TESTS BETWEEN WEATHERGARD AND ORDINARY BELTING**

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# NEWS DIGEST...

**Kraft industry outlook**
for remainder of 1961 is "conservative with a capital C," say sales chiefs. There is little likelihood of price rises for bags and board. However, according to most observers, the bottom has been reached and the situation for kraft grades should improve. Kraft paper is coming into U.S. from abroad in quantities that definitely have an important effect and will hold prices at present level.

**A trend for the future**
may be indicated in joint plan for possible commercial production of chemicals from wood by Georgia-Pacific Corp. and Allied Chemical Corp. A pilot plant in Portland, Ore., is making some wood-based cyanide and sulfate wood-base chemicals and more will be studied. Some industry prophets have predicted many future pulp-paper-chemicals works will be joint operations of pulp-paper and chemical companies, possibly leading to important mergers.

**Six to nine cent hourly wage increases**
and other benefits are features of some recent mill and union pay agreements. These include mills in Holyoke, Mass., area (7 cents), Badger in Wisconsin, Scott in Detroit, Schweitzer Div. Kimberly-Clark, St. Joe Paper in Florida and others. Fitchburg (Mass.) Paper Co. agreed to 14 cent rise and fringe benefits and adjustments worth 5 cents more.

**Paper production-to-capacity ratios rose**
for week ending June 24 to 93.3%, compared with 89.3% (revised) for preceding week; 97.1% for corresponding week a year ago. Paperboard production ratio for week ending June 24 was 95%, compared with 92% for preceding week and 94% for corresponding week a year ago.

**MB&PR plans to expand into Australia**
with a 210-ton linerboard and coarse paper mill near Adelaide, to cost approximately $25,000,000. J. V. Cline, chairman of MacMillan, Bloedel & Powell River, says that Sandwell & Co. is making engineering studies for the project, which will be partly financed by Australian capital. This venture will be the first move for MB&PR outside Canada.

**Decision on a new pulp mill**
will be reached within a few weeks by Canadian Collieries Resources, Ltd. It is considering a pulp mill on the east coast of Vancouver Island, according to Pres. Norman Whittall, Vancouver. "If we can show that it is feasible to manufacture there and get outlets for pulp on a long term basis, we will undoubtedly go ahead," said Mr. Whittall. Canadian Collieries Resources has been in the forest industry for several years, owns sawmills and plywood plants.

**WORLD REVIEW FOR 1961**
is PULP & PAPER's next issue. Our editors are finalizing reports from every country and territory in the world for this unique volume (July 24 issue). It now seems certain that world paper and paperboard production will exceed 80 million tons for the first time in history. Five years ago, in 1956, it was 68 million.

...POLLUTION CONTROL

# Tougher Measures in Store

## Broader federal powers seen—big question, how broad?

By VINCENT M. DeSALVO, Staff Editor

WASHINGTON, D.C.—Passage of a new water pollution control bill that will broadly extend federal authority and cut deeply into state powers appeared assured last week. Attitude on the part of the pulp and paper industry was a mixture of concern and stoic resignation.

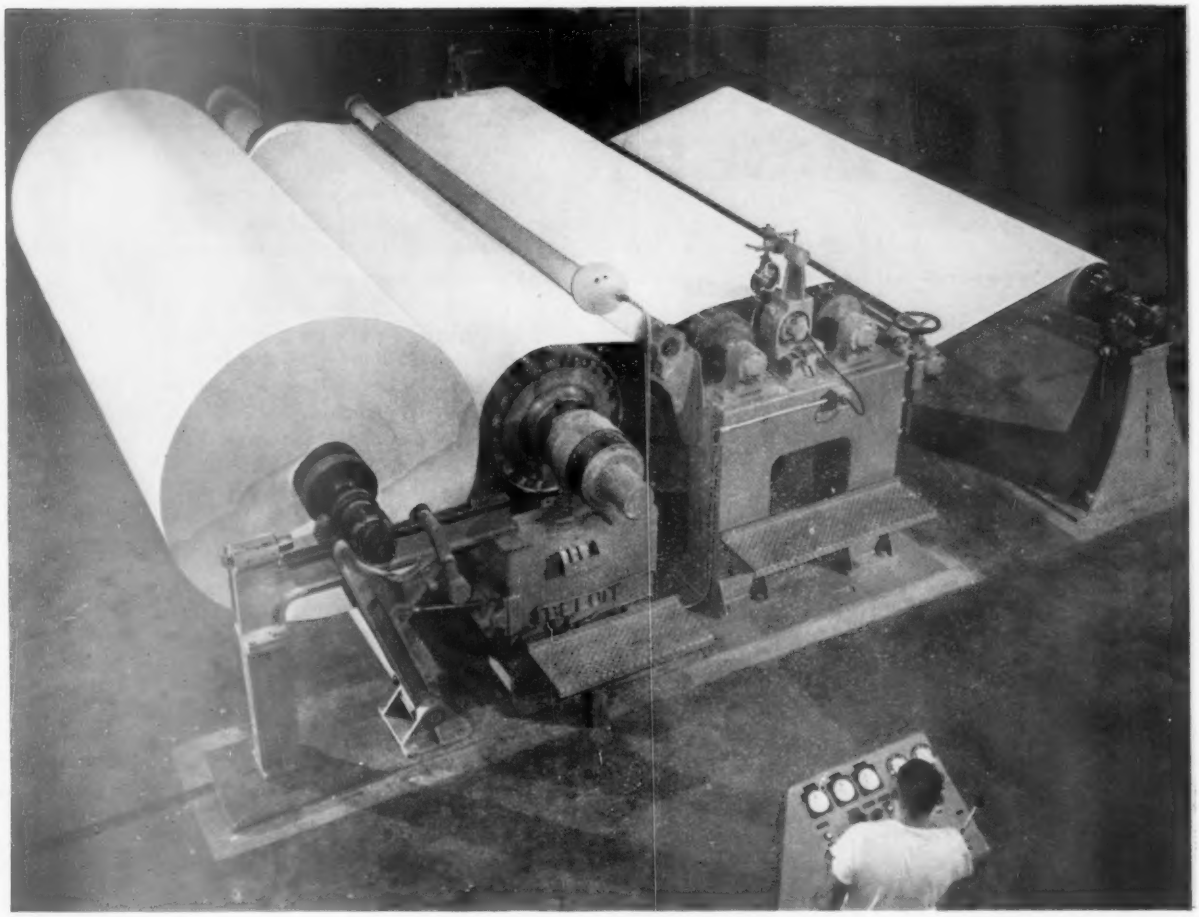
A committee of both houses of Congress recently approved a bill of Robert S. Kerr, Oklahoma Democrat, which would bring pollution problems in all "navigable waters" under the control of the federal government.

It is this provision that extends Washington's authority to all "navigable waters" that the industry finds most objectionable. The designation "navigable waters" will include waters that have up to now been considered strictly intrastate.

Under the current law, the Surgeon General's office is empowered to take action to abate pollution only if interstate in character.

By now, the amendment—possibly incorporating provisions of another stricter bill—may have become law.

Already OK'd by voice vote in the Senate, the amendment must be ap-



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proved by the House before being submitted to President Kennedy.

Then the higher appropriations called for must be authorized.

Feeling in the industry last week was that necessary approvals would be given swiftly.

**Sen. Kerr's proposal widens** Washington's role in pollution control to a degree considered unwarranted —and indeed dangerous—by pulp and paper men, but it does not go as far as an amendment introduced by Rep. John A. Blatnik, Democrat of Minnesota.

The existing law provides that the Surgeon General can intervene on a state level only on the request of a governor or a state pollution control agency. Rep. Blatnik has recommended that a municipality, with the concurrence of the governor and the anti-pollution agency, be permitted to seek federal intercession.

Both amendments would boost appropriations for grants-in-aid, but Sen. Kerr's calls for a smaller increase.

Currently, the U.S. is authorized to spend $50 million a year for grants to localities. Sen. Kerr wants this hiked to $70 million in 1962, $80 million in 1963, $90 million in 1964 and $100 million in 1965 and 1966. Rep. Blatnik wants to boost spending to $100 million a year for every year.

In its original form, the Blatnik bill provided for creation of a new Federal Water Pollution Control Administration in the Dept. of Health, Education & Welfare. This agency would have far-reaching investigatory and enforcement powers. The provision was stricken by the House Public Works Committee. The House then overwhelmingly approved of the remaining provisions.

Thus amended, the bill was referred to the Senate Public Works Committee, which voted to substitute the Kerr proposal.

**As Sen. Kerr's bill now stands** it is only slightly less unacceptable to the industry than the original Blatnik proposal. As a spokesman puts it, "The Kerr bill is the lesser of two evils."

Whatever preference does exist for the Kerr bill rests on the fact that it would retain jurisdiction over pollution problems in the Surgeon General, and that it would cost less than the Blatnik bill.

Although it seems unlikely that the amendment President Kennedy signs will provide for creation of a new agency, there is still no guarantee that the proposal is dead. The President

PRISTINE STREAM: The pulp and paper industry would like to keep it that way.

believes the present machinery in the Dept. of Health, Education & Welfare is adequate to enforce federal anti-pollution edicts.

However, a well informed pulp and paper leader points out, Sen. Kerr might agree to the setting up of a separate bureau if Rep. Blatnik is insistent and can muster enough support for the proposal. As chairman of the Senate Select Committee on National Water Resources, the Senator, it was explained, would not want his name left off any new pollution control measures.

**The industry's main argument** against tampering with the existing law is that it gives the federal government sufficient power to deal with contamination in interstate waters.

Actually, pulp and paper men feel the 1946 law vests too much control in Washington. And they would prefer that the federal government relinquish some of its authority in the interstate sphere to interstate compact groups, such as the Ohio River Valley Water Sanitation Commission and the New England Water Pollution Control Compact. At the very least, they don't want the present law changed. "Since the existing provisions have been federal law for some years, the industry is, more or less, reconciled to some federal control over interstate pollution problems," a spokesman says.

Several other industries and groups feel the same way. The petroleum, chemical, textile, and steel industries don't want more national control. Nor do most state pollution abatement bodies. The steering committee of the State & Interstate Water Pollution Control Administrators, representing state agencies and compacts, is on record as opposed to the Kerr and Blatnik bills.

**In nearly all situations,** the pulp and paper industry contends, a state is better informed about its pollution problems than the federal government ever could be, and therefore is better able to cope with them on a realistic and equitable basis. The fear is expressed that Washington is too remote and isolated from the local scene to know what its troubles are. If inequities arise now, it is felt, they would occur more frequently in the future, if federal jurisdiction is extended.

This point was trenchantly made by John E. Becker, general manager of the Pulp Dept., St. Regis Paper Co., when he appeared before Senate and House committees earlier this year in behalf of the American Paper & Pulp Assn. Asserted Mr. Becker: "We believe, on the basis of experience, that

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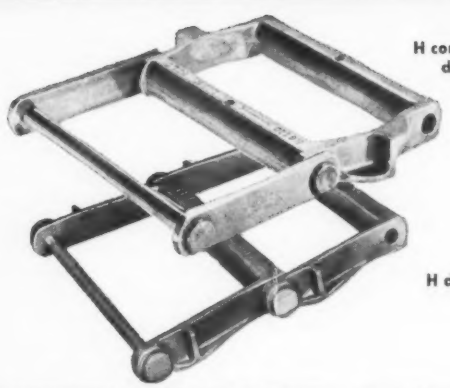
The favorable strength-weight ratio and unique design of WS drag chain, with welded steel construction and full length bearing area for pins, result in low conveyor operating costs and easy handling during installation, replacement, or repair. Trough wear is reduced because of the lower chain weight. Symmetrical design, with identical sliding area top and bottom, permits turning the chain over for added service life. Special attachments can be welded to WS steel chain and reworking in the field is easily accomplished if the links are distorted or damaged in operation.

For complete information on Link-Belt's new WS welded steel drag chain, write for Folder 2772. Or call the Link-Belt office or authorized stock-carrying distributor nearest you. You'll find them listed in the yellow pages of your telephone directory under CHAINS.



H combination drag chain

H drag chain

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state governments and state agencies are fully competent to deal with intrastate water pollution problems. We believe that the changes proposed would constitute a force upon the states and state agencies to abdicate their responsibilities, which the states, due to their direct involvement with the local conditions, are better able to carry out."

But, despite efforts of APPA and other groups to counter the moves to expand federal authority, Mr. Becker last week said he felt "a pretty stringent" bill is going to pass. In an interview with PULP & PAPER, he voiced special concern over the original Blatnik provision to permit a municipality to request federal intervention. If Washington could intervene on this basis, he explained, it might feel more free to take drastic action—such as shut down a mill—than it does now. On the other hand, the governor of a state—or its pollution control agency—might be quite reluctant to take such action, recognizing the dire economic effects it could have on an entire area.

**Industry has another argument.** "A crucial point industry spokesmen have made is that they are not at all convinced that increasing federal spending won't achieve the opposite result—that is, a slowdown in projects as states, towns, etc., line up and just wait for their doles," says an APPA official.

The National Assn. of Manufacturers holds the same view. "We feel that we have evidence that federal grant programs have introduced a slowdown in local spending," says a member. "In general, grant programs have replaced unsubsidized construction with subsidized construction, instead of supplementing it."

In addition, the industry, having spent $100 million for stream improvement over the past years, feels it is making adequate progress under current laws to lick its pollution ills.

**WATER TREATMENT PLANT** at a paper mill in Pennsylvania, which has anti-pollution laws that are said to rank among the most stringent in the country.

**Between 1943 and 1959,** paper and board production soared from 17 million tons to 34 million tons, while average waste load per ton was cut 51%, according to the National Council for Stream Improvement.

Several methods are being used to combat contamination, and several new techniques are under extensive study. Solid loss is being reduced by recirculation of process waters and with solid-removal equipment, chemicals and heat from spent pulping liquors are being recovered by more efficient methods, and novel waste disposal techniques are being employed.

And research aimed at improving current methods and discovering new ones continues unabated. Three new techniques of reoxygenation now being investigated include use of surface-active agents, introduction of air into turbine draft tubes at power stations, and use of weirs and cascades.

**Over-all record of the industry** in reducing pollution—which it concedes is one of most critical problems—has been exemplary. Still, anti-pollution efforts is an area in which the industry is believed by the public—and by some government officials—not to have met its responsibilities, according to one public relations expert. In a recent talk to the National Paperboard Assn., John H. O'Connell, vice president of Hill & Knowlton, Inc., said that NCSI "is thought to be doing an excellent job by those who know its work." He indicated, however, that not enough people know its work.

It is highly questionable that the industry at this late date can rally enough support—public or otherwise—to block passage of the Kerr amendment—or of a compromise bill.

In the future, however, Mr. O'Connell advised pulp and paper men to beef up their efforts to educate the public as to the economic importance of their industry in the community, and as to its public spirit and good faith as evidenced by its efforts to control pollution.

An off-the-cuff comment of one of its leaders might be included in any message to the public. He told PULP & PAPER last week: "We're not for pollution. We realize we have a problem and we are doing something about it. We want to be sure that whoever has authority realizes the economic problems involved. Our aim is eventually to clean it all up, if we possibly can." ■



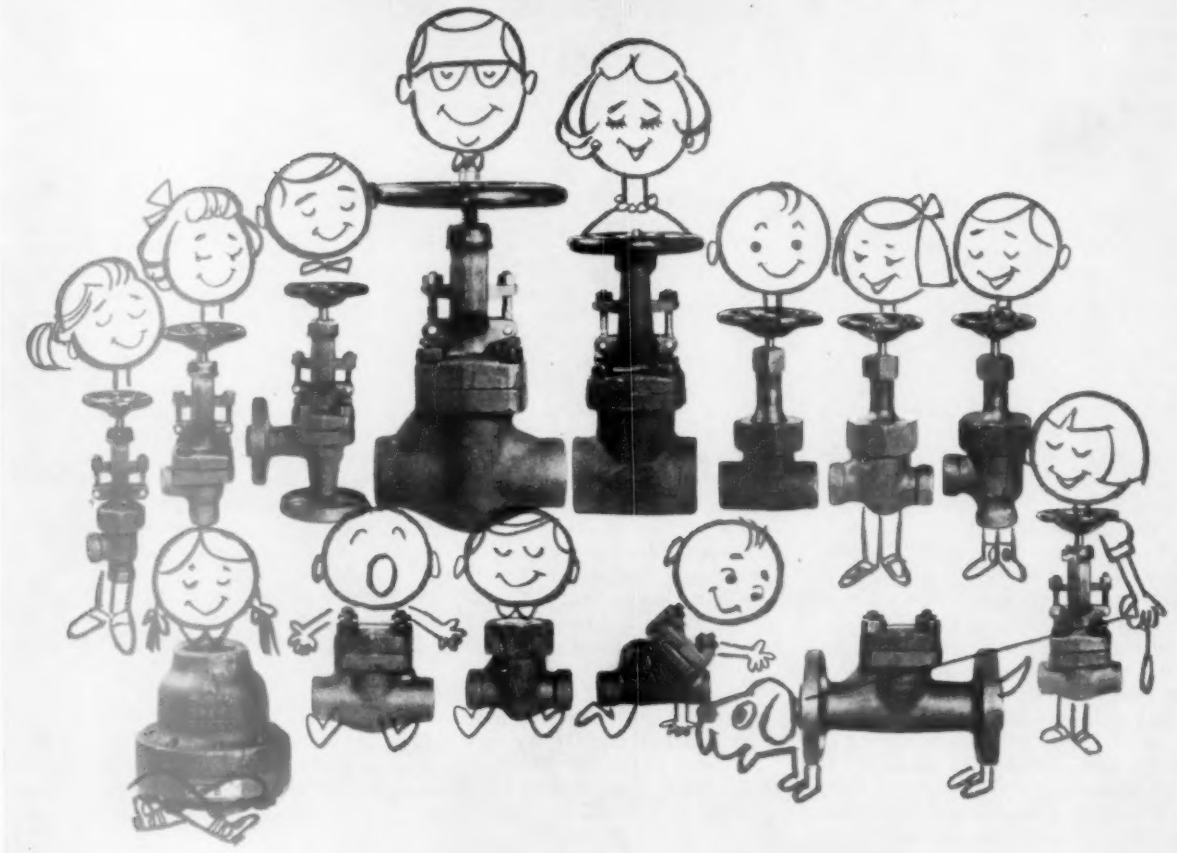
# Fair upturn is seen for rest of 1961

## Personal income, housing starts, industrial production are up

NEW YORK — Signs that the nation's economy will be fairly good for the balance of 1961 and possibly for another year were seen by some observers at midyear. The encouraging signs: personal income for May was up at $413.7 billion—possibly an all-time high. Industrial production too moved along and hit an index of 108, up from 105 in April. Industrial production index, says one observer, has never gotten above 111, so it's only 3 points off its peak of Jan. 1960.

No signs of weakness are seen in the nation's economy at present. The

# CRANE'S LARGE FAMILY OF SMALL STEEL VALVES



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upward trend is not expected to develop into a boom, but will continue at a fairly moderate rate. The big problem is that U.S. industry has sufficient capacity to meet most of its needs so there will be no need for a big investment goods program. Capital goods and equipment will be building at fairly strong levels but not enough to cause a sharp upswing.

**Paper and board production** for the first six months was estimated at about 17.3 million tons, compared to about 17.5 million tons for the same time last year; off less than 2%.

**Mounting exports continue** to brighten the industry's picture. Total woodpulp—dissolving and paper grades—exports by American mills were 20% above last year for January and February, says the American Paper and Pulp Assn. The Pulp Consumers Assn. shows paper grade pulps only to be up 23% for the first four months over the corresponding period in 1959. It must be remembered the big push in export pulps did not really get going last year until April. The Pulp Consumers noted that as compared with the last four months of 1959, paper pulp exports are down 6%. Dissolving pulp, of course, is virtually entirely an export business now. There is a good chance for pulp to match or better last year's all-time record of 1.1 million tons of exports by U.S. producers. Lately the market abroad has shown some softening.

APPA figures show for the first two months of this year, compared to the corresponding period a year ago, paper exports moved up 11.1% and paperboard climbed a healthy 25.3%. Here, also, is good chance to equal or better last year's record of about one million tons of paper and board exports.

**For the first time this year,** shipments of folding cartons topped year ago levels in May, says the Folding Paper Box Assn. of America. Dollar volume of May shipments was up 2.1% and tonnage was 2.9% higher. Industry volume for May was put at $79.7 million compared to $78.1 million in May, 1960. Tonnage for first five months: 927,700 tons, about 29,600 tons under the 957,300 tons shipped same time last year. Dollar volume was $385.5 million the first five months of 1960, about $11.1 million over the $374.4 million for 1961's first five months.

Newsprint production for Jan.-May 1961 in North America hit an all-time peak of 3,652,378 tons. U. S. mills' output were up to 882,332 tons, more than 31,411, or 3.7%, higher than the same time in 1960. Canadian output was 0.9% up, at 2,770,046 tons.

**The materials revolution** has just begun, says Reed O. Hunt, president of Crown Zellerbach Corp. "We are still in the vast process of improved mechanization and have compounded the problems by adding automation . . . full impact (of which) has not yet been felt. One vital question affecting corporate management today, however, is how to fit automation properly into the organization and use it to lift individual skills and initiative rather than depress them."

Mr. Hunt was featured speaker at commencement exercises at Pacific University, Forest Grove, Ore., at which he received an honorary ph.d. degree. He told the graduates that anyone responsible for any phase of any operation is "part of management" and as these responsibilities tend to increase as machines become more complex, "the line between blue and white collars will become even harder to find."

**Continued impact of cost-price** squeeze, coupled with non-recurring costs of starting new manufacturing facilities, accounted for a 45% decline in West Virginia Pulp and Paper Co's. earning for first six months of fiscal 1961, reports President David L. Luke. Major reason for lower earnings was cost of bringing new installations into operation, presumably the new paper machines now coming on line at the Luke, Md., mill. Mr. Luke hopes for some upturn during the normally active fall months of 1961. ■

# Wage increase approved on West Coast

PORTLAND, ORE.—Pay rates negotiated by 46 Ore.-Wash.-Calif. mills became effective June 1. The 2% pay increase affecting more than 20,000 employes has been ratified by members of the two participating unions (UP&P and IBPS&PMW).

The increases range from 4 to 10¢ per hour. The contract calls for an increase in the night shift differentials, 9¢ for swing shift, 12¢ for graveyard. Qualification for the 4-week vacation allowance was reduced from 25 to 23 years. A funeral leave of up to 3 days with pay for scheduled work-days lost due to a death in an employe's immediate family has been granted. Other contract changes include improvements in overtime provisions.

Terms of the recently approved contract establish an hourly base rate of $2.24 for men, $1.925 for women. Journeymen mechanical employes have a new hourly rate of $3.14. ■

# Counter march! Fiber firms "de-merge"

LANCASTER, PA.—Armstrong Cork Co. ended a seven-year merger by withdrawing from the fiber rug business and leasing its Oshkosh, Wis., facilities to Deltox, Inc., a new company headed by T. C. Widder, Jr.

The lease is renewable annually for five years, with an option for Deltox to buy the facilities during this period. The agreement also includes purchase of inventories at Oshkosh.

The Deltox plant produces fiber rugs, carpet backing and industrial specialties. Armstrong is withdrawing from the business because the firm's Floor Division has found that fiber rugs are not as well suited to its nation-wide wholesaler distribution system as are the resilient floors and walls which make up the bulk of its expanding line.

Discussing his future plans for the 60-year-old Deltox business, Mr. Widder said, "It is our intention to raise Deltox to a position of leadership in the floor covering business through the proven advantages of specialized, flexible management. In addition to our floor covering business, Deltox will continue to manufacture and sell carpet backing, rug cushion, packaging materials and other new industrial products." ■

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# Woodfibre reopens on kraft

## Slates virtually entire 250 tpd pulp output for exports

WOODFIBRE, B.C.—This mill, once a thriving sulfite pulp operation, and later shut down because it had become non-competitive, is back in business. A $15 million investment, the use of new wood species, special blends and a change to the kraft process have made this possible.

Now the mill is producing Fibrenier, a bleached kraft pulp, designed, says William E. Breitenbach, president, Rayonier Canada Ltd., to yield high strength, brightness and opacity to fine papers. Fibrenier is being made from blends of Western hemlock, red cedar and Douglas fir. Other new pulps will emerge from the mill after trial production runs at Woodfibre.

"We haven't previously used cedar and fir in our pulp mills," says Mr. Breitenbach. "We gain a greater measure of product diversification and forestry conservation through using species formerly not used in our sulfite mills."

NEW MARKET PULP kraft mill of Rayonier Canada at Woodfibre, B.C., 35 miles from Vancouver on Howe Sound, costs $15 million to convert from sulfite.

**The conversion program** entailed abandonment of such existing equipment as was suitable only for production of sulfite and the installation of facilities for producing kraft. Since the mill is on a relatively small, more or less level area, space for expansion was limited. The area is bounded by water on one side and by steep slope on the others. Planning had to allow not only for initial 250 tpd operation, but for doubling capacity later on.

Some buildings such as the acid plant, unbleached screen building, the original boiler room and the engine room were completely demolished. Other buildings of more recent construction were usable but the equipment had to be demolished and removed to provide space for new equipment.

The steam power plant has one 100,000 lbs/hr. oil fired boiler and two 100,000 lbs/hr. oil and hog fuel fired. One has been modernized with a Riley pneumatic spreader stoker and by modification of heating surface to give improved continuity of operation. If this proves satisfactory, the second wood fired boiler will be converted.

The electric power plant has two 2,000 kw Elliott back pressure single extraction turbogenerators and a 2,250 kw generator driven by a Pelton wheel. These are supplemented by a Canadian General Electric 3,750 kva 0.8 pf 4,160 volt generator driven by a 3,300 kw, 550 psi 725°F. condensing turbine. This is the largest condensing steam turbogenerator ever built in Canada, says Rayonier.

Recovery of the digester liquor fuel value and chemical content is by a 570 psi 725°F. Babcock Wilcox & Goldie McCulloch recovery boiler designed to burn 855,000 lbs. dry solids/24 hrs. They also supplied the venturi scrubber, cyclone separator and major auxiliary equipment. The recovery boiler draft fans, venturi pumps and feed pump have Canadian Westinghouse back pressure steam turbine drives.

A 9 ft. dia. by 175 ft. Traylor kiln with Peabody scrubber and recausticizing equipment by Eimco Process of Canada Ltd. are on the site of the sulfite acid plant.

**Half the chip requirements** and hogged fuel will be delivered by barge from Rayonier's Marpole and New Westminster sawmills. The existing woodroom at Woodfibre will furnish the other half. Chips are stored in three existing concrete silos supplemented by an open storage area. A Rader pneumatic system transfers chips to or from storage piles.

The Horton black liquor four effect evaporator has a surface condenser to give maximum heat recovery. There are five 12 ft. by 55 ft. Dominion Bridge digesters and the foundation for a sixth. Fabricated of Lukens stainless clad steel, the digesters are installed in the original digester building. Old digesters are used as filtrate tanks for brown stock washers. They were moved out of the digester building by tipping them over bottom end first and passing them out through openings cut in the wall. Two sulfite digesters remain in the building as white liquor storage tanks.

A new steel frame building with asbestos-cement siding adjoins the digester building and contains a Sherbrooke centrifugal knotter, three Sherbrooke 8 ft. by 16 ft. washers, two Cowan unbleached primary screens, one tailings screen, a 6½ ft. by 14 ft. unbleached decker and a bleached decker.

Practically all bleaching equipment is new. A six stage continuous bleaching sequence includes chlorination, hypochlorite, caustic extraction and chlorine dioxide. There are five new 8 ft. by 12 ft. Dorr-Oliver-Long vacuum washers. The mill uses the Electric Reduction . . . **turn to p. 17**

*It's the first of its kind ever built in America*

*It saves up to 25% on horsepower*

*And 70 to 90% of its power is recovered as hot air for drying*

*It has reserve capacity, too— no more vacuum pumps to add*

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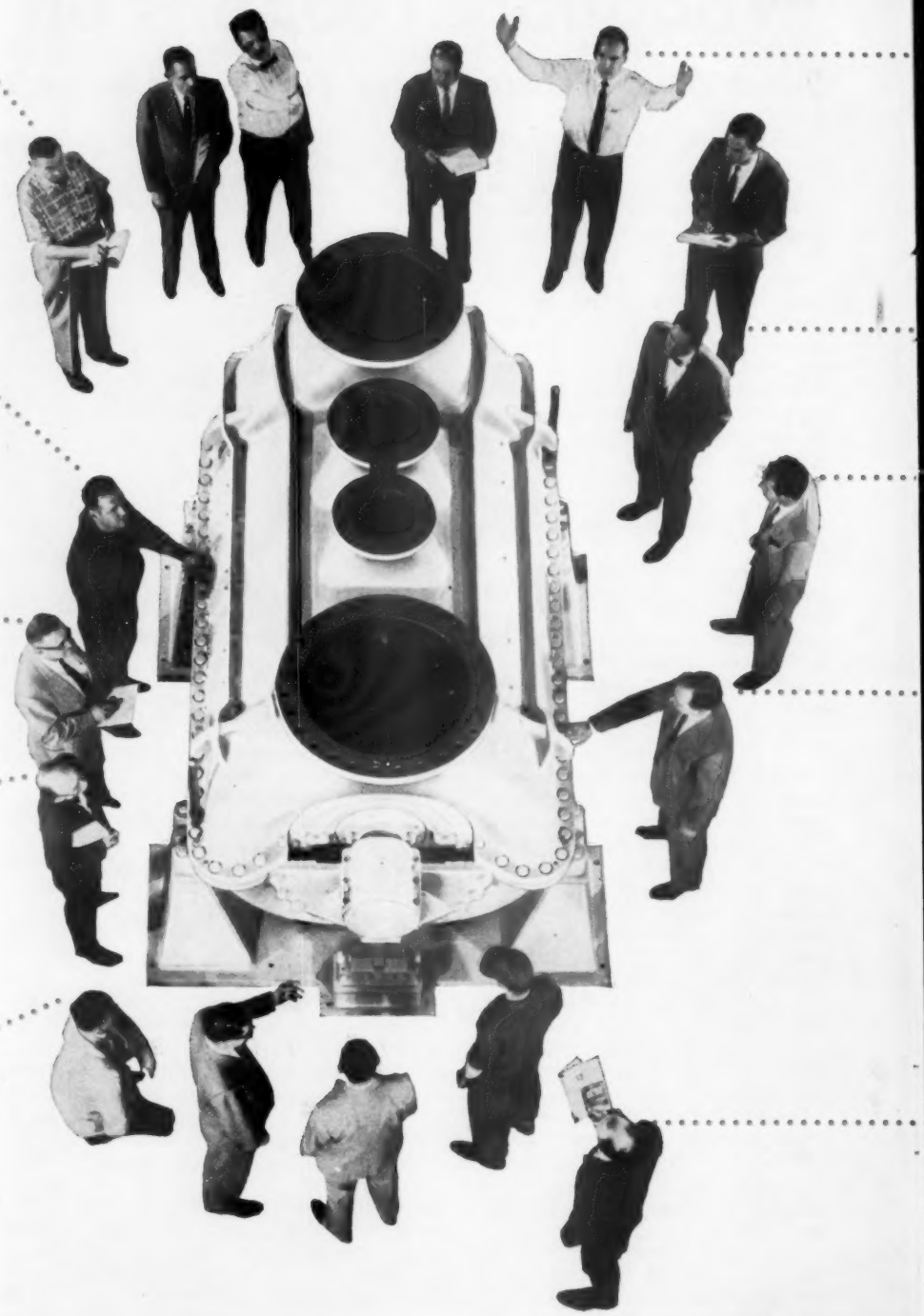

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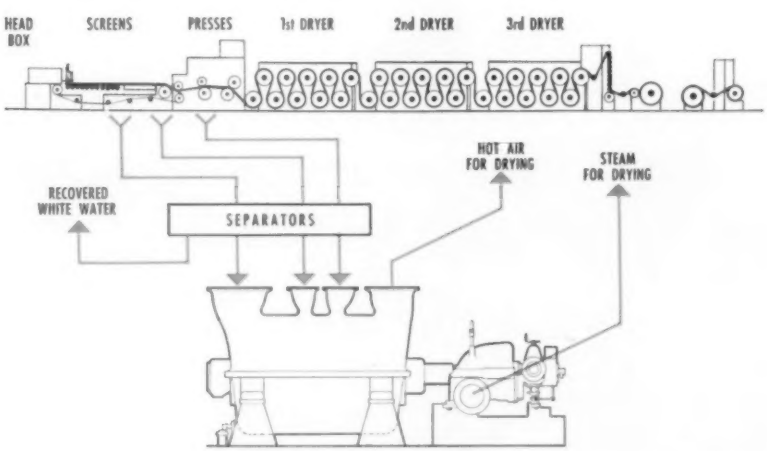


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**continued from p. 13** . . . Co. of Canada's chloride $ClO^2$ generating system.

Three bleach stages use existing batch reactors which were converted to downflow towers by modifying and equipping them with Sherbrooke circulators and dilution nozzles. Four Sherbrooke thick stock pumps, four Dorr-Oliver-Long steam mixers and two Paper Machinery Ltd. horizontal $ClO^2$ stock mixers are used.

Detail engineering for the new mill was by Sandwell & Co., working with Rayonier's central engineering divisions. ■

# Flurry of plant expansion in the West

**Keyes Fibre Co.,** Waterville, Me., has broken ground in Sacramento, Calif., for a multi-million dollar pulp-molding plant. Manufacturing is slated to start in mid-1962. The plant will make products for the food industry. Its market will comprise 11 western states, plus Hawaii and Alaska. An estimated $5 million worth of products will be made annually for the first few years.

**Weyerhaeuser** and **Georgia-Pacific** have started container operations in Olympia, Wash.

Georgia-Pacific's plant is set to run single and double wallboard in a variety of components. It has printing equipment capable of handling a full range of box sizes, stitching and taping facilities and a folder-gluer.

Weyerheuser's plant produces all types of corrugated containers. It will serve the expanding western Washington market.

**Hoerner Boxes, Inc.,** Keokuk, Iowa, has started production at its $2.5-million corrugated box plant at Gurnee, Ill. Supervisory and sales personnel have been named.

**Georgia-Pacific Corp.** has chosen California over Alaska as the location for a 300-tpd kraft pulp plant. It will be situated at the company's operations at Samoa.

Georgia-Pacific has "large quantities of redwood and Douglas fir waste material from (its) plywood and sawmill operations in the Eureka-Samoa area . . . that can be converted into pulp chips at very low cost," according to James L. Buckley, president of G-P Alaska Co.

In announcing it will build in California, the company confirms its intent to permit expiration on July 1 of a provisional sales contract for 7.5 billion board feet of USFS timber in the Juneau area.

**Canadian Forest Products Ltd.,** Vancouver, B.C., expects to reach agreement this summer with Alberta regarding its application for cutting rights in an extensive area near Grand Prairie. If satisfactory terms can be arranged, the company will advance plans for a pulp-paper mill in the area.

Meanwhile, CFP has completed buying all assets of Northern Plywoods and Grand Prairie Lumber Co., whose operations would be integrated with the proposed mill.

**International Paper Co.** has picked Gardiner, Ore., as the site for its West Coast pulp plant. Dams and related facilities are being built at Siltcoos and Tahkenitch Lakes, which will provide water for the plant. The dams are needed to impound run-off and raise water level. Cost of dams will be an estimated $100,000 apiece. A line linking the impoundment and mill will cost about $1 million.

Size and type of mill haven't been revealed. Start of construction will depend on "economic conditions," to a large extent.

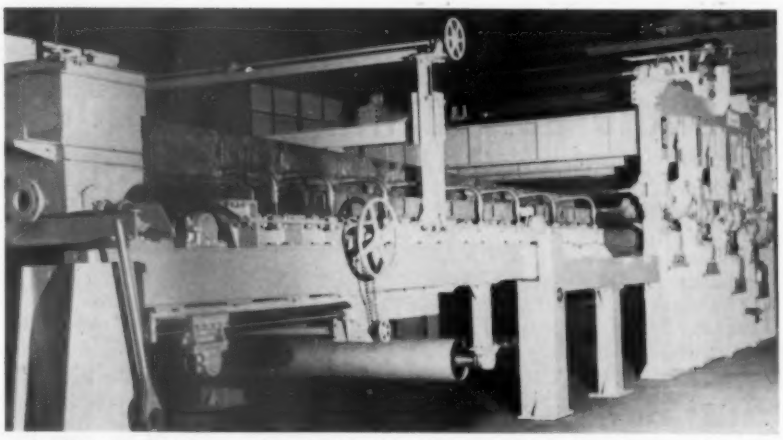
The dams had to be started before June to qualify the company for an easement and water rights. ■

# Dierks enters insulating board field

BROKEN BOW, OKLA.—Dierks Forest, Inc., has started up a new insulating board machine here to produce a new type wallboard it calls Unifibre. Only kiln dried pine chips are used, shipped from Dierks' mills in Dierks, Ark., and Wright City, Okla. The board machine, Choctaw Chief, has a wire width of 114 in. and ultimate capacity of 400,000 sq. ft./day.

The Bauer Bros. pulping system uses an M&D digester, chip breaker, refiners and tickler refiners. Pulp then passes to a Clark & Vicario Deculator before going to the board machine.

Designed by Edge Wallboard Machinery Co. and built by Layton-Greenfield, Inc., the board machine has several unusual features. These include: Adjustable pitch forming table; inclined presses and streamlined suction rolls. Jacks and stretchers are below the Fourdrinier rail, allowing breast roll end and headbox to be raised or lowered for optimum flow and with no other adjustments needed. Important in the control operation is the uniform ribbon-type flow of stock up to 12 in. deep at the same speed as the moving wire. ■



CHOCTAW CHIEF has a wire width of 114 in. and ultimate capacity of 400,000 sq. ft./day.

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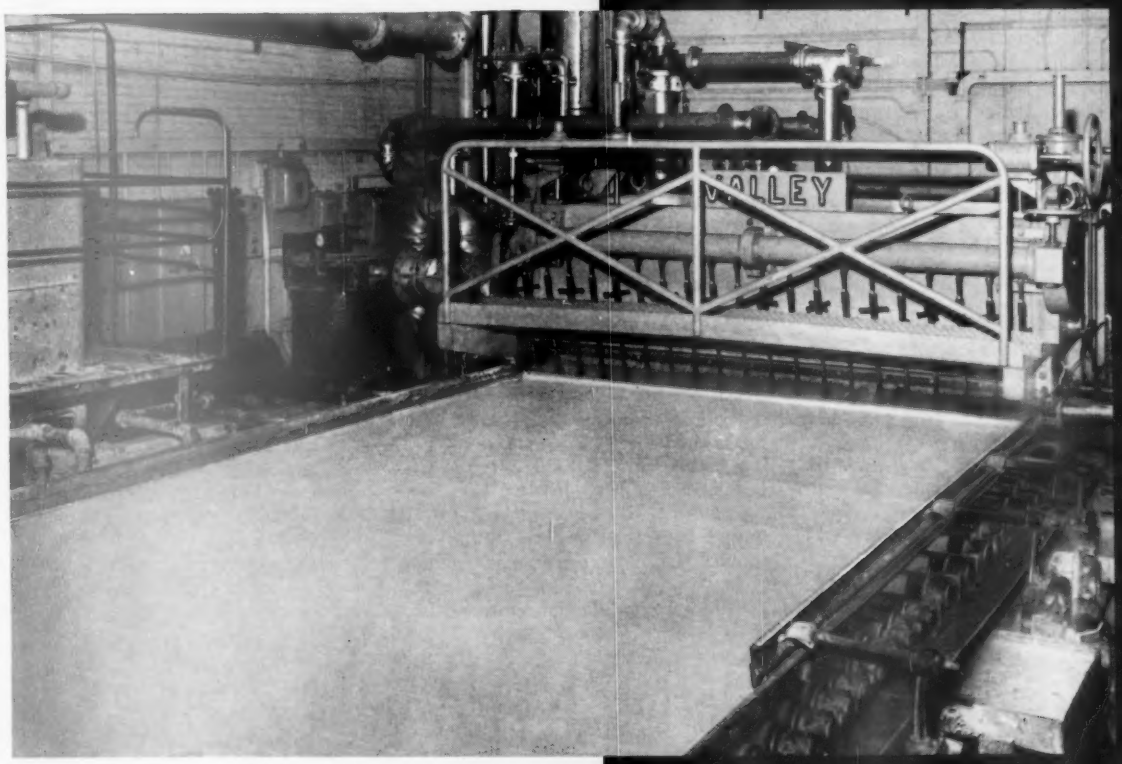


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# Canadian International winds up expansion

MONTREAL—The $32 million expansion program of Canadian International Paper Co. at its LaTuque, Que., mill has ben completed with installation of No. 4 Fourdrinier machine.

Dominion Engineering Co., Lachine, Que., and Beloit Iron Works, Beloit, Wis., each supplied about half of the components of the machine, which is being used for production of kraft paper and board.

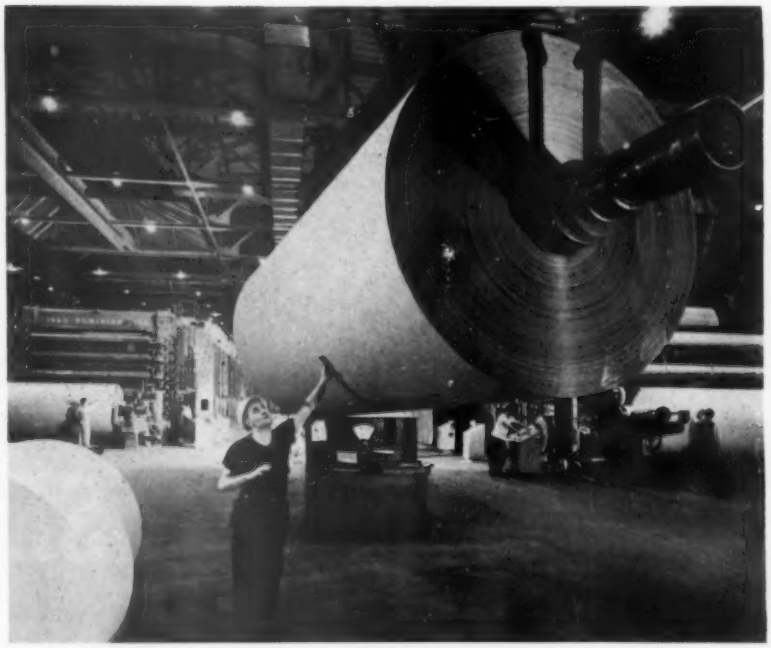
The unit, with a 176-in. wire, is 400 ft. long, 20 ft. high, and weighs 2,500 tons. Power requirement is 6,000 hp.

Rated capacity of the machine is 35,000 tons annually. But improved methods in processing and over-all efficiency at the mill make it possible to keep the machine supplied with pulp without reducing the market pulp available from the LaTuque mill. The machine was designed for maximum flexibility in the production of bag and wrapping paper and also bleached foodboards.

Durnford, Bolton, Chadwick & Ellwood were architects for the LaTuque expansion; engineering and construction were carried out by Foundation Co. of Canada.

The machine room extension is 940 ft. long by 68 ft. wide; a new warehouse was also built—720 feet long by 90 feet wide.

An off-machine coater, which will be used in conjunction with the laminator, is being installed at a cost of $675,000. It will improve quality, appearance, printability of paper and boards by a surface-coating process.



ONE OF FIRST ROLLS to come off Canadian International Paper Co.'s No. 4 Fourdrinier machine is moved from the dry end toward the cutting and rewinding equipment

The original Latuque mill was built by St. Maurice Industrial Co. in 1910. It had a capacity of 50 tons. By 1920, output was increased to 170 tons a day.

In 1927 a process for the manufacture of high alpha kraft pulps was introduced. Later the mill started producing bleached and unbleached pulps for a variety of markets. Under a $20,000,000 expansion program, kraft paper and board were added to the mill's production.

Current daily production is 450 tons of bleached and unbleached kraft pulp, 515 tons of kraft linerboard, kraft paper and bleached kraft board, and 350 gallons of turpentine. ■

# New digester will produce kraft pulp

LEWISTON, IDAHO—Potlach Forests, Inc., will install the first continuous Impco vertical digester for production of kraft pulp here. Capacity will be 300 tpd.

Vance V. Vallandigham, vice president of pulp, paper, and converting at Potlatch, says installation culminates over two years of careful study and evaluation.

Potlatch's new IBM 1710 computer will make possible flow of information from the digester to the computer for improved quality control and uniformity in production of kraft bleachable pulp. The pulp will be used for folding cartons and specialty paperboard. Additionally uniform high quality will be assured, and the programming of special orders will be possible.

The vertical cooking installation utilizes the Impco chip lifter and the Skew-Jector. The chip lifter is a machine for moving chips upward through the digester. The skew-jector is a high-pressure feeder to handle both chips and cooking liquor without damage to the wood fibres.

**Chips and liquor** from the skew-jector are fed into the chip lifter which moves chips slowly upward in a compact mass. The liquor moves independently and overflows through a strainer at the top. Then, it's sent to the recovery plant. Cooked chips are moved from the top by a scraper to the blow tank. The pulp is delivered to the bleach plant without bleach plant modification, except that this continuous pulp process has eliminated the need for one stage of brown stock washing.

Installation is scheduled to begin Sept. 18. Potlatch has assigned a team of engineers, technicians and operating personnel to devote full time to all phases of the digester and its application into the system at Lewiston. ■

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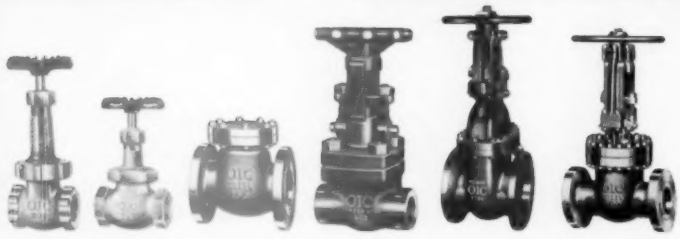

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# Industry's image is "dull and unexciting"

SAN FRANCISCO—"People are not aware of paper and paperboard as an industry. . . . They're inclined to look upon it as a box company here, a bag company there, a writing paper company someplace else. There is a complete lack of feeling that it is an industry."

In brief, this is the main point of a survey made by Hill & Knowlton, Inc., for the National Paperboard Assn. and the American Paper & Pulp Assn. Making the report at the NPA's Spring Meeting here in San Francisco, was John H. O'Connell, vice president of the public relations firm.

The survey covered interviews with 283 persons; 163 members of the industry, 121 non-industry people. Industry members interviewed were chief executives, operating executives, public relations executives and mill management. Non-industry people interviewed were in paper mill areas and included newspaper editors, financial analysts, college and university professors, members of state legislatures and state government officials concerned with or interested in operations of the industry.

**The attitude is best** summed up, says Mr. O'Connell, by a Massachusetts newspaper editor and publisher: "The paper industry has not projected any image. It is dull, flat and unexciting." A New York security analyst said, "The average man in the street considers the paper and paperboard industry as unglamorous and not essential, compared to steel and oil.

Other key points in the survey: The press has been sadly neglected, on an industry-wide basis; pollution is cited as the number one trouble spot (see Pollution report, page 5, et al, for Mr. O'Connell's remarks on this subject.) Educational institutions are an area where the industry "hasn't made the sale," according to half the respondents.

**Outside-the-industry opinions** were also summarized: "As might be expected, almost nobody is enthusiastically bullish about paper, although some respondents say they used to be. These people cited, on the basis of their understanding and knowledge of the paper industry, the lack of growth potential, excess capacity and inadequate pricing."

Other comments: Many companies in anticipation of population growth are increasing their facilities and there is much duplication. The big problem of the industry is price vs. overcapacity and industry's inability to raise prices because of an oversupply of paper. A West Coast banker said: "They're selling their products too cheap and giving away their stockholders' assets."

Opinion leaders believe the industry will probably grow, based on population growth alone. (An Institute of Paper Chemistry Executives Conference study by Dr. Neil McLeod holds that there is no predictable relationship between population and paper consumption (see PULP & PAPER, June 12, p. 13-15.) But growth, they also believe, beyond that rate depends upon the vigor of research and development activities. There is a strong feeling that your industry's products research efforts suffer by comparison with other industries, said the report.

More than half the "thought leaders" said they do not know as much as they would like to know about the role of paper and paperboard products in modern life. There was almost unanimous agreement that the general public takes the industry for granted and has no idea how useful its products are. A West Coast banker said, "The industry has failed to sell its contributions to leisure time through development of throwaway products. Another: "The public has no idea of the diversity of products within the paper industry and the number of businesses served."

**What should be done** about the opinion survey. asked Hill & Knowlton. They suggested the industry's public relations activities should be aimed at developing better recognition of several points: Paper and paperboard products are essential to the health, well-being and economic life of all the people; the industry is constantly working to develop new products to better serve the public and broaden its market; through improvements in science and technology, the industry has kept down the cost of its products while improving quality; as a great and growing industry, it offers a wide variety of prime career opportunities.

**Significance of this report** stems from the fact that it is believed to be the first such survey made on the industry's image to its various publics. For some time there has been talk of an industry-wide public relations program. If the industry decides to do this, it will be guided to a large extent by the opinions disclosed in the survey. ■

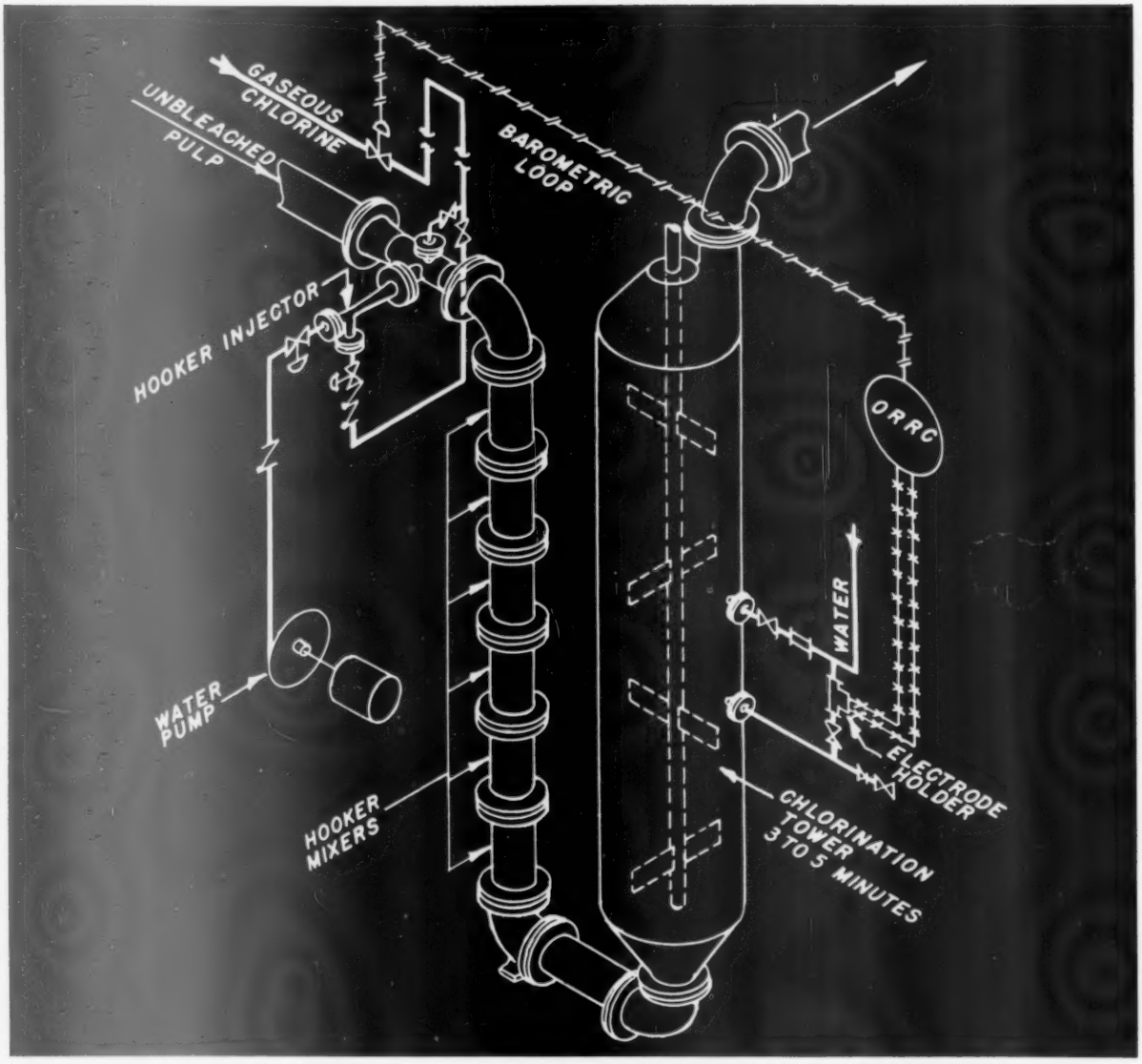


# Cotton stalk pulp makes headway

LOS ANGELES—Commercial production of pulp from cotton stalks is progressing in California. At least one organization is producing pulp from the stalks on a pilot plant basis. This firm has progressed development-wise to the extent it is now evaluating specific components of process equipment for a possible series of mills to be strung across the California cotton-growing belt north of Los Angeles.

As currently envisaged, production would not be confined to pulp alone. These 25 tpd pulp mills would each consume 80 tons of cotton stalks daily —which reportedly could be supplied on year-around basis from a growing area of 6-mile radius. Associated marketable by-product materials from 25 tons of pulp would include 18 tons of pith and 25 tons of ammoniated liquid fertilizer. The latter would be immediately available for return to croplands. The state looks on this "back to the land" factor, and the consequent elimination of effluent problems, with favor.

Horkey-Moore Assoc., a division of Houston Fearless Corp. of Los Angeles, is the firm engaged in this development work. Its pilot plant, operating at Torrance, Calif., is producing pulp reputed to be of "good" quality




# New package whips the variables in pulp chlorination

The first requirement for uniform pulp quality, high pulp strength and high brightness is optimum pulp chlorination—exactly the correct amount of chlorine for each pulp fiber.

Optimum chlorination is accomplished by three steps—each interdependent and equally important:

**1.** Rapid solution of gaseous chlorine in the pulp slurry—the Hooker chlorine injector is designed specifically for this. Maximum use is made of water energy to atomize the chlorine for rapid, uniform solution in the pulp slurry.

**2.** Uniform distribution of chlorine solution around each pulp fiber—Hooker stock line chlorine-pulp mixers break up the fiber clumps and distribute the chlorine solution uniformly throughout the pulp slurry. An agitated reactor holding the stock an additional 3 to 5 minutes supplements the stock line mixers. Efficient and continuous mixing is assured throughout the first few critical minutes of the reaction. Each fiber receives the same amount of chlorine.

**3.** Automatic control of chlorine addition by redox potential—ends the guesswork in chlorine application, reducing chlorine consumption and improving pulp quality. Successful redox control requires efficient chlorine injection and thorough chlorine-pulp mixing.

Hooker technical service engineers will help you design and install the Hooker chlorine injection system, Hooker stock line chlorine-pulp mixers and supplementary reactor, and the redox control system . . . For the full story, write for Bulletin 258: "Improved Pulp Chlorination."

## HOOKER CHEMICAL CORPORATION

HOOKER CHEMICALS PLASTICS

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*Sales offices:* Buffalo, Chicago, Detroit, Los Angeles, New York, Niagara Falls, Philadelphia, Tacoma, Worcester, Mass. *In Canada:* Hooker Chemicals Limited, North Vancouver, B. C.

by a tri-ammonium process.

Tentative plans, assuming economic success of the process, call for erecting 12-16 plants in the state's Central Valley cotton-growing area. The first plant is expected to get into production next year and an erection schedule has already been drawn up. Start on No. 2 plant would, as now planned, take place 3 months after inaugurating production of pulp-fertilizer-pith at mill No. 1. As construction techniques become standardized and "bugs" are eliminated from the production process, plants in the 16-mil series are to be set up on a specialized erection basis.

Studies indicate that, at 6 mile radius cotton-growing area per mill, the present U.S. producing area could support 476 of these mills. ■

## . . . CONTINUOUS PULPING

# New cooking method proves successful

## Australian continuous "countercurrent operation" offers advantages

BURNIE, TASMANIA, AUSTRALIA—Patents are pending in a number of pulp-making countries throughout the world for a new method of countercurrent continuous cooking in a Kamyr digester. The development as described to PULP & PAPER is the work of A. R. Sloman, research director here for Associated Pulp & Paper Mills Ltd. The installation is at the APPM Burnie Mill.

The Kamyr digester on which the developments have been made was originally installed four years ago and designed to operate using a two-stage process invented by Mr. Sloman in 1946. This was operated for three years. Modifications to the digester were made to allow trials with countercurrent operation, and during the past 15 months the process has been brought to full commercial operation producing some 85 short tons a.d. pulp per 24 hours.

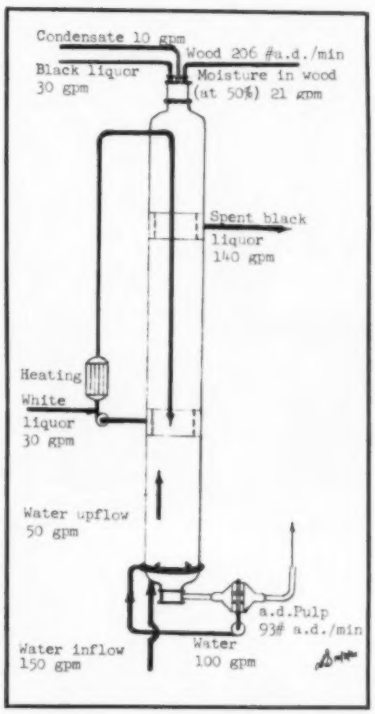
To secure fully countercurrent operation the loss of cooking chemical from the digester in the outgoing pulp must be reduced to a very low figure —that is, substantially all the cooking chemical must be removed from the cooked pulp before it leaves the digester. If this is done, then the pulp leaving the digester will also be practically free of soluble organic reaction products and after knotting and screening will be ready for bleaching.

**The new process accomplishes** this goal by introducing water at the bottom of the digester in quantity necessary to carry the pulp from the digester, usually at 10-12% stock concentration, and also additionally sufficient to allow an upflow of water in the digester. This upflow provides a countercurrent diffusion-displacement washing of the pulp, which at this stage is in the form of undisintegrated chips although it is fully cooked. During the passage of the water upwards, cooking chemical and soluble reaction products contained within the cooked chips and the fibers themselves are removed and carried upwards. At the lower screen belt white liquor containing the cooking chemical is added and the temperature raised in the usual way by circulation through an external steam heater. The white liquor and upflowing water continue upwards, and the concentration of active chemical decreases as the liquor flows upwards and meets decreasingly cooked wood. The black liquor is removed from the digester at the upper screen belt to the recovery system.

**Washers are completely bypassed** in this process. It has been operated successfully using the soda process on eucalypt hardwoods at Burnie with the pulp and delivered from the digester direct to the knotting and screening section and thence to the bleachery. The pulp is blown at the temperature of the water being added and has been blown at 20° C. when cold water was used; hot water at 85° C. is generally used and the temperature at the blow is then 85° C.

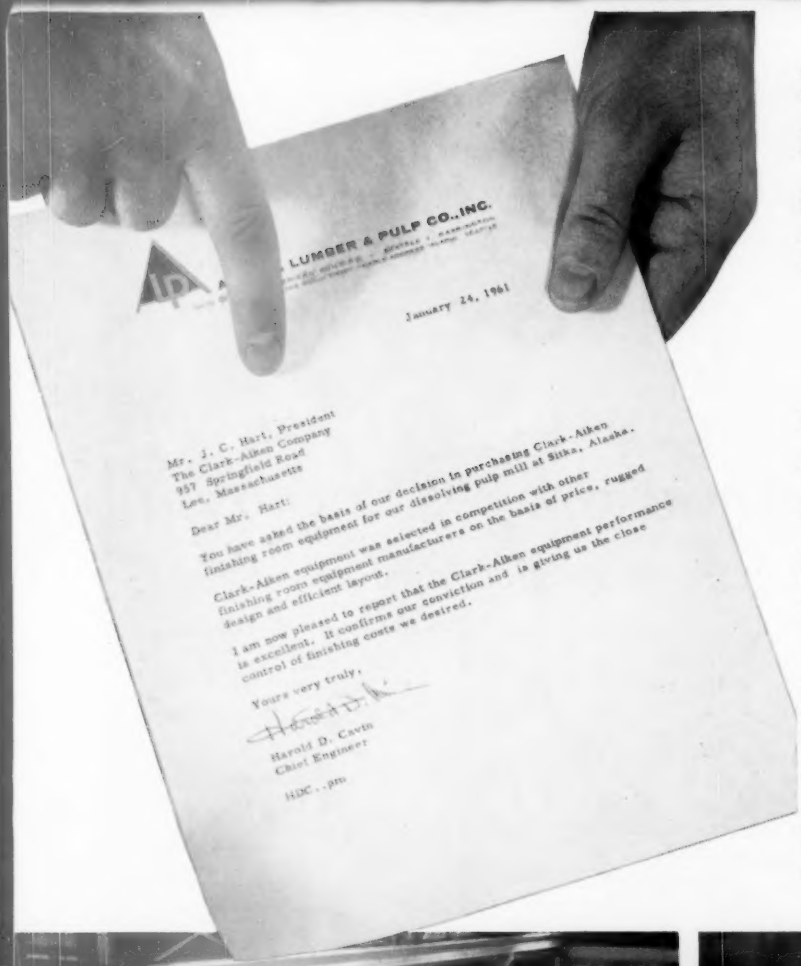
The chemical content of the liquor leaving the digester with the pulp has been of the order of 28 lbs. $Na_2O$ per short ton air-dry pulp, which is of the same order as the loss usually found from pulp-washing sections.

**Advantages of a countercurrent** operation of this kind are revealed very clearly in that the chemical requirement for cooking is significantly reduced, and particularly in the fact that the pulps produced are of a very much lighter color than those achieved by the usual methods of cooking. There is a subsequent reduction in the bleaching.




**WATER IS INTRODUCED in the bottom of digester to begin first stage of countercurrent operation.**

A modification of the process can be used to achieve some of the benefits of the process if black liquor instead of water is injected at the bottom of the digester; in this case the pulp leaving the digester must be washed conventionally but the upflow of black liquor in the digester effects the necessary retention of cooking chemical in the digester and assures counter-current treatment. Reduction in chemical required for cooking is obtained but the pulp color is not lighter. ■


LUMBER & PULP CO., INC.
January 24, 1961
Mr. J. C. Hart, President
The Clark-Aiken Company
957 Springfield Road
Lee, Massachusetts
Dear Mr. Hart:
You have asked the basis of our decision in purchasing Clark-Aiken finishing room equipment for our dissolving pulp mill at Sitka, Alaska.
Clark-Aiken equipment was selected in competition with other finishing room equipment manufacturers on the basis of price, rugged design and efficient layout.
I am now pleased to report that the Clark-Aiken equipment performance is excellent. It confirms our conviction and is giving us the close control of finishing costs we desired.
Yours very truly,
Harold D. Cavin
Chief Engineer
HDC:.pm

# HERE'S..."Control of finishing costs we desire" at the Alaska Lumber & Pulp Co. Inc.

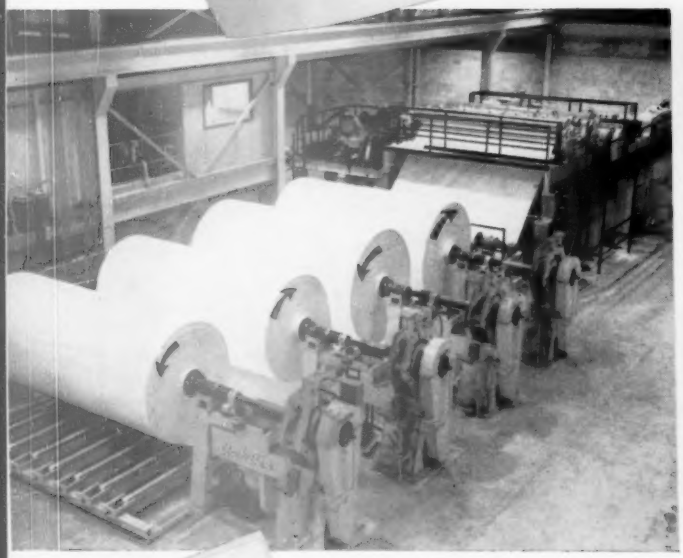
## Clark-Aiken

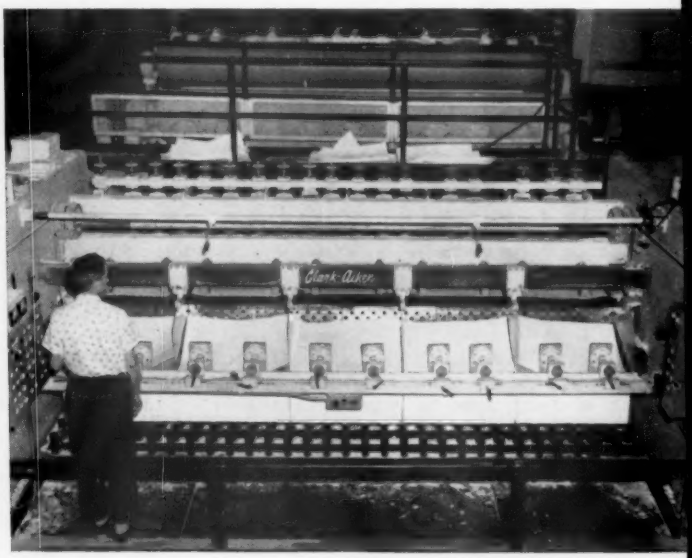
## PULP MILL EQUIPMENT can knock out high finishing costs for you too!

Controlled costs, improved production, reserve speed, uniform sheet lengths, easy maintenance, and many equipment innovations give recognition to the Sitka installation of Clark-Aiken pulp mill machinery as outstanding.

Satisfaction, as expressed in Mr. Cavin's letter, speaks the successful meeting of mill management desires and requirements — the engineering coordination and cooperation to achieve uncommon results.

Clark-Aiken machinery is well known for its day-in and day-out reliable performance and unusual sturdiness . . . so, if you're looking for cost cutting opportunities, why not talk to Clark-Aiken now — explore the possibilities of equipment innovations for savings in your plant.



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CANADIAN REPRESENTATIVE: GORDON W. KEATES,
133 FLORA DRIVE, SCARBOROUGH, ONTARIO

# 10 ph.d.'s, 21 master's, awarded at Institute

APPLETON, WIS.—Ten ph.d. degrees were awarded to graduates of The Institute of Paper Chemistry at commencement exercises of Lawrence College. Twenty-one master of science degrees were awarded.

**A total of 187 ph.d degrees have** been earned at the Institute since its founding in 1929. The institute, the American pulp and paper industry's own graduate school, ranks in the upper quarter of the 104 universities granting ph.d.'s in chemistry and chemical engineering.

All but three who earned master's will continue study at the Institute toward their ph.d. degree. The three are entering directly into the pulp and paper industry.

The last m.s. degree awarded at this year's commencement was the Institute's 300th and went to Lyman K. Woodbury, Jr., of Portland, Maine, who will continue to study toward a doctorate.

Winner of the Westbrook Steele gold medal award for the outstanding research thesis of the year was Ronald Estridge of High Point, N.C. His thesis subject: "Initial retention of fibers by wire grids."

With the entrance of the ten ph.d. degree recipients and the three m.s. recipients who are terminating their study, The Institute of Paper Chemistry's alumni body now numbers 440, including 57 who were special students.

COMMENCEMENT EVENT at Appleton was awarding of a master of arts degree *ad eundem* by Lawrence College to DR. J. EDWARD TODD, dean of admissions, Institute of Paper Chemistry, since 1942. He continues as consultant to the Institute. New dean is Dr. Arild J. Miller.

TROTTER SCHNEIDER SPALDING EASTY WADSWORTH SANBORN ACADEMIC ROBES at Institute's Commencement. Four other new ph. d.'s already had gone to work in industry and couldn't attend—all are going in industry except one to Western Michigan's paper school (see list in story).

Over 80% of the Institute's alumni are in pulp and paper or allied industry, according to Dr. Edwin R. Laughlin, secretary of the Institute's alumni association.

**Five company presidents** are among the Institute's alumni in the pulp and paper industry. One is a board chairman; 21 are vice presidents; 25, research directors; and 30, technical directors. Besides 42 states, alumni are working in Switzerland, Mexico, Scotland, Peru, England, Canada, India, Burma, and Formosa.

The Institute anticipates a student body of approximately 75 in its graduate school for the 1961-62 academic year. The student body of 75 last year broke previous enrollment records.

**1961 Ph. D. graduates** of the Institute and where they are employed: Wavell F. Cowan, Montreal, Clyde Paper Co., Rutherglen, Scotland; Dwight B. Easty, Avon Lake, Ohio, National Vulcanized Fibre Co., Yorklyn, Del.; Ronald B. Estridge, High Point, N.C., Albemarle Paper Mfg. Co., Richmond, Va; Samuel C. McKee, Longview, Wash., Weyerhaeuser Co., Longview, Wash.; I. Bruce Sanborn, Pepperell, Mass.; Robert L. Schneider, Lakewood, N.Y., Eastman Kodak Co., Rochester, N.Y.; John Schulz, N.Y., N.Y., Western Michigan University, Kalamazoo, Mich.; Charles W. Spradling, Linden, Ala.; Patrick Casey Trotter, Longview, Wash., Weyerhaeuser Co., Longview, Wash.; William W. Wadsworth, Fairview Park, Ohio, Scott Paper Co., Philadelphia, Pa.

Those receiving m.s. degrees were Richard W. Abrams, Seattle, Wash.; G. Frederic Bayer, Burlington, Wis.; Winfield H. Bearce, Jr., Hallowell, Me.; William C. Bliesner, Eden, Idaho; John A. Church, Richmond, Va.; James K. Crossman, Joplin, Mo.; Thomas C. Elias, Downers Grove, Ill.; Carl A. Jentzen, North Haven, Conn.; Gerald Katz, Winthrop, Mass.; Fred P. Lodzinski, Stevens Point, Wis.; Earl W. Malcolm, Menominee, Mich.; Hiroshi Matsuura, Tokyo, Japan; Richard E. Olson, Chicago; Neftali Puentes C., Bucaramanga, Colombia; R. Heath Reeves, Pontiac, Mich.; Richard J. Ross, Mexico, Me.; John B. Snell, Madison, Wis.; George A. Tinti, Norway, Mich.; Gerald F. Touzinsky, Chicago; Richard B. Wasser, Oshkosh, Wis.; Lyman K. Woodbury, Jr., Portland, Me.

When the Institute awarded its first m.s. degree in 1931 to Edward D. Amstutz, now head of the chemistry dept., Lehigh University, it consisted of one wing of one of the present buildings, with approximately 20,000 square feet of floor space, a student body of 17, a faculty of four full time and five part time members, and plant and equipment valued at approximately $86,000.

When Mr. Woodbury received the 300th master's this June, the Institute consisted of 10 buildings with approximately 175,000 square feet of floor space offering facilities for education, research and library materials ranging across 10 scientific areas and six technology fields of interest to the pulp and paper industry, a student body of 75, a faculty of 45, and plant and equipment with a valuation of more than $6 million in terms of replacement, plus student housing facilities which cost $670,000. ■

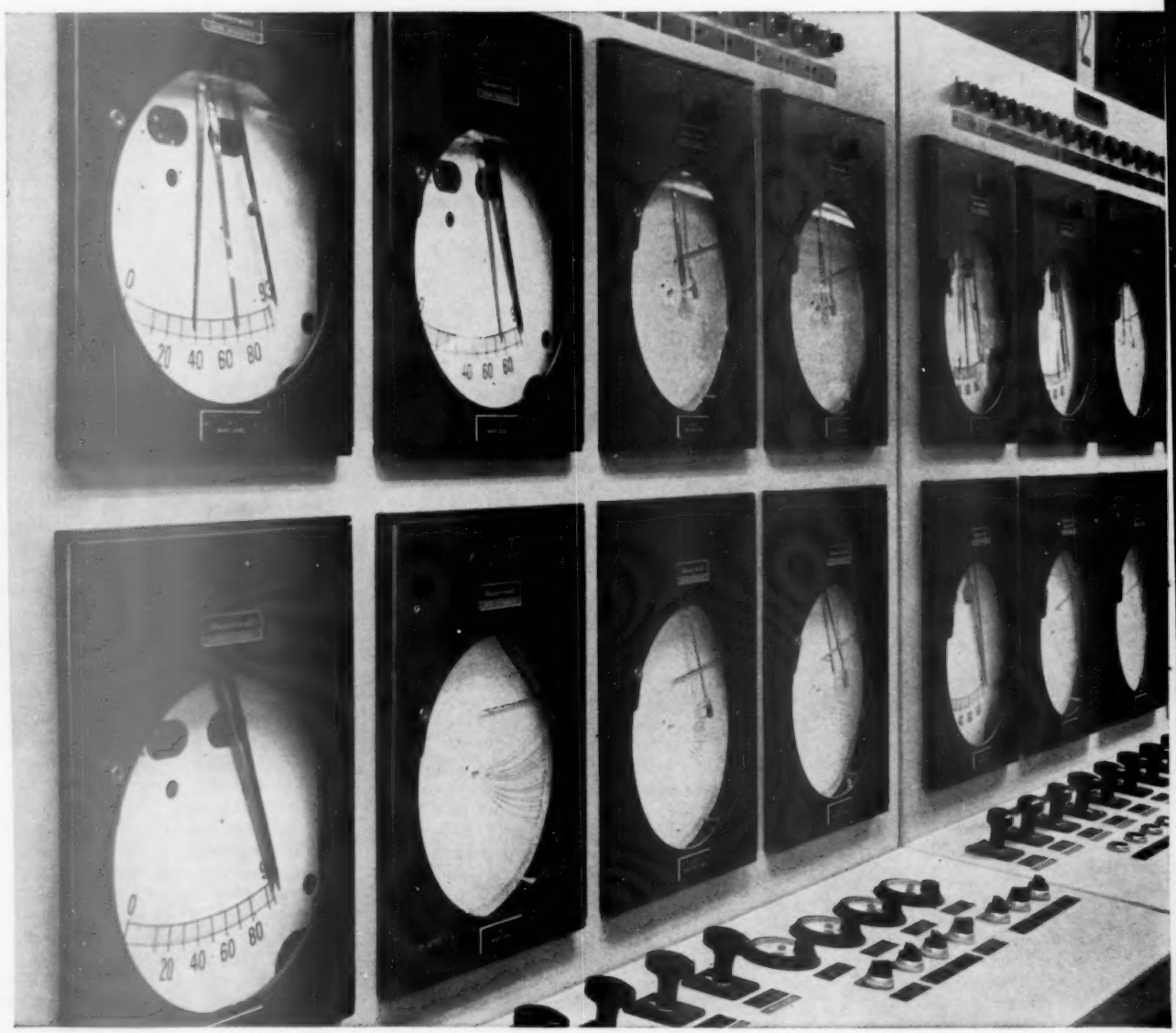
# Stock proportioning goes automatic

## System improves product quality, cuts costs at Combined Locks Paper Co.

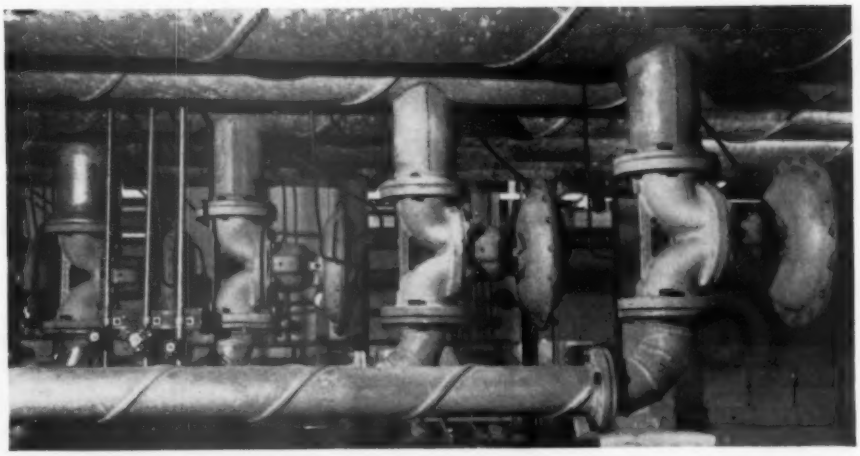
Automatic control has stabilized product quality and brightened the profit picture at Combined Locks Paper Company, Combined Locks, Wisconsin. The mill recently replaced manual controls for batch stock preparation with a system designed entirely by Honeywell, from level detector to valves. The system will pay for itself many times over in short order.

The Honeywell control system was designed to automate five existing mixing chests which were previously manually operated. Honeywell controls measure the level of stock in five mixers. Proportioning and sequencing for each blending system are completely automatic. The desired furnish can be reproduced identically from batch to batch by setting a repeat switch. Stock proportioning is varied simply by changing the control index of instruments on the panel. Because this automatic control is far more accurate than manual methods, product quality is uniformly high. Where operators previously had to stand by during the entire process, pushbutton simplicity now saves time, money, and tedious repetitive labor.

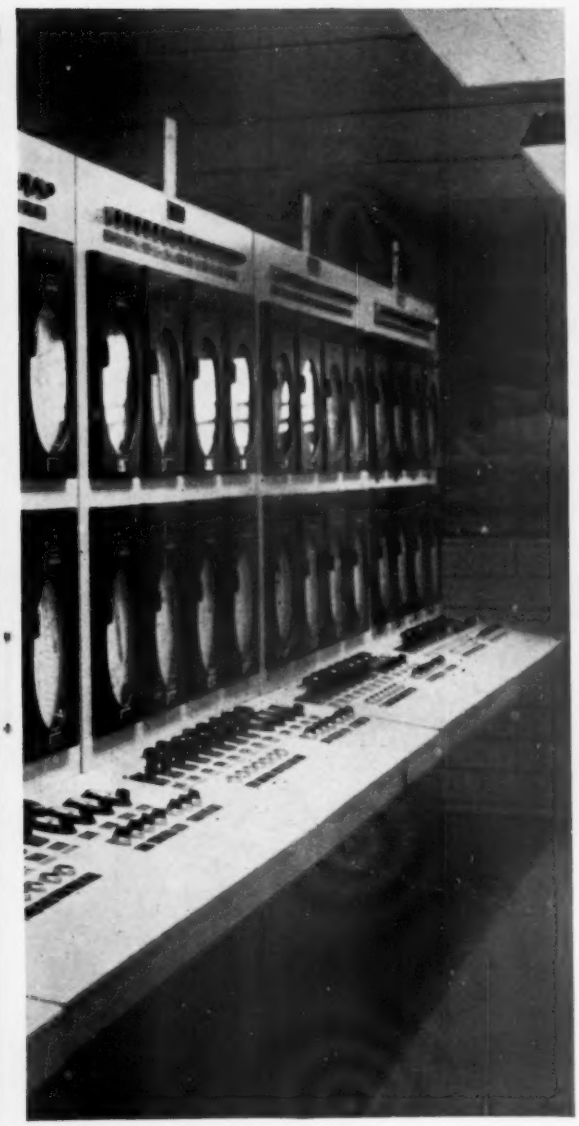
To automate a process in your mill, specify the results you want, and let Honeywell do the rest—everything from initial planning, through installation and startup, to maintenance. Call your nearby Honeywell field engineer—he's as near as your phone. MINNEAPOLIS-HONEYWELL, Wayne and Windrim Avenues, Philadelphia 44, Pa.—In Canada, Honeywell Controls, Ltd., Toronto 17, Ontario.

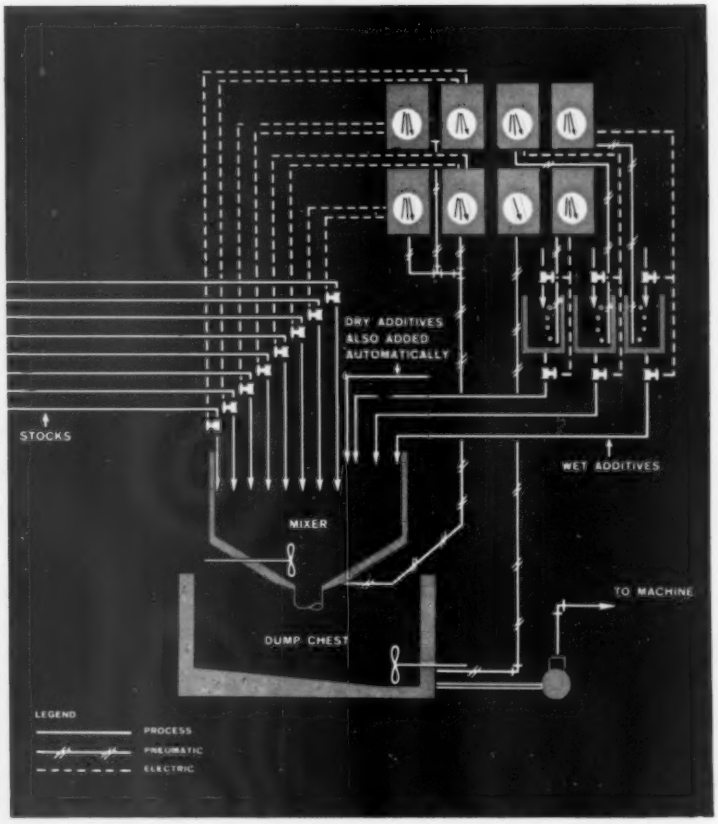


# with Honeywell control system



**Honeywell Saunders Control Valves** regulate input stocks to five batch stock proportioning systems. (Use of repeat cycle provides continuous supply to machine.) The self-cleaning action of these valves makes them ideal for stock blending. Each of the five systems uses eight stock valves and six wet additive valves.






**Honeywell instruments** measure level of stock in five beaters and mixers. Sequence of stock additives can be changed from batch to batch or be reproduced exactly.

**Honeywell**

First in Control

SINCE 1885

**HONEYWELL INTERNATIONAL** Sales and Service offices in all principal cities of the world. Manufacturing in United States, United Kingdom, Canada, Netherlands, Germany, France, Japan.

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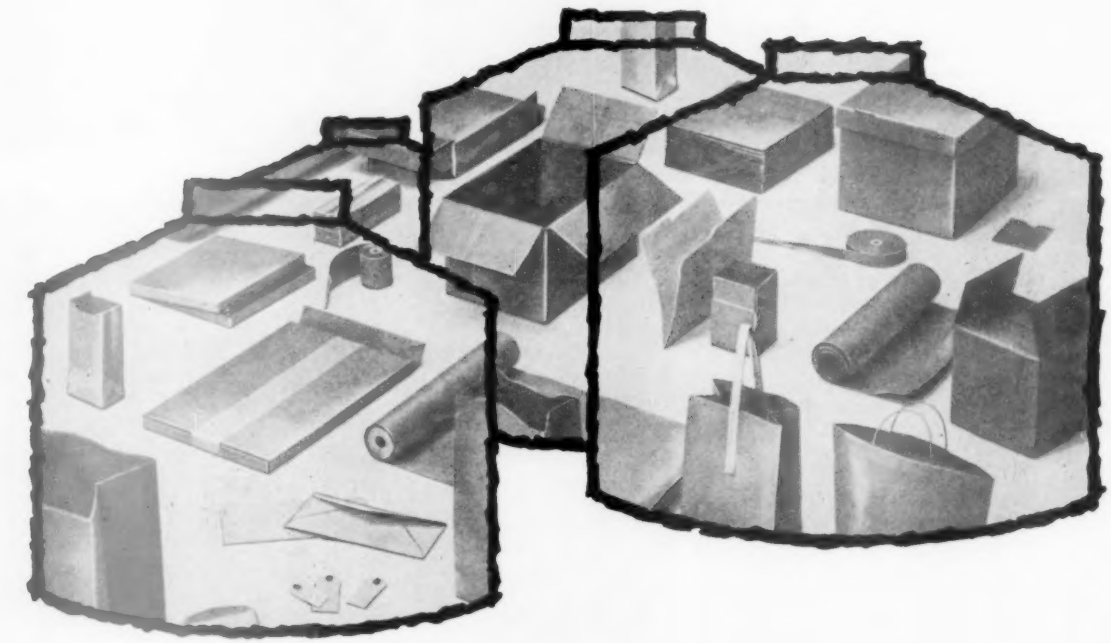

WEST END as a major supplier of highest quality natural salt cake programs expansion of its in-plant storage to meet ever-increasing requirements of industry. West End is constantly exploring new solutions to transportation, distribution and handling problems to assure its continuing position as a reliable and economical source.

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# More funds for Miami U. and Syracuse

OXFORD, O.—Increased industry support of Ohio's first collegiate paper technology program is planned by the Miami University Pulp & Paper Foundation.

Representatives of the 16 member firms of the foundation met recently after completion of the first full four-year cycle of the Miami University paper technology program, marked by graduation of the first class of seven men.

Foundation trustees approved budgeting $7,500 in scholarships for the coming year as compared to $3,600 provided by industry for the past year.

C. Edwin Brandon, director of the Miami program, pointed out the industry is providing jobs this summer for 26 Miami paper technology students. The program will double by 1963 if not in the next year, he said.

"We had five jobs which we weren't able to fill with paper tech students this summer, but we'll have more students next summer," Brandon explained. "This year, we have six who are in summer school, and several of our men took jobs not directly related to the industry."

Plans for more extensive recruitment of promising high school students and for wider participation by the industry also were discussed.

Foundation members re-elected three trustees and created two new trusteeships for 3-year terms. Re-elected are R. P. Bertschy, of Kimberly Clark Corp.; Bernard H. Bamer, Stone Container Corp., and Harold M. Annis, of Oxford Paper Co. New trustees are Stanley H. Reed, Crystal Tissue Co.; and R. F. Vokes, The Black-Clawson Co.

Trustees re-elected its executive committee: Howard E. Whitaker, chairman, The Mead Corp. as president; William Beckett, president, Beckett Paper Co., subsidiary of Hammermill Paper Co., as vice president; Mr. Brandon, as secretary, and Lloyd Goggin, university treasurer, as treasurer.

**Syracuse Pulp and Paper Foundation** announces at Syracuse, N.Y. that it is increasing the amount of money appropriated for scholarships to students specializing in pulp and paper technology at the State University College of Forestry at Syracuse University to $10,000.

Robert F. Vokes of Middletown, O., president of The Syracuse Pulp and Paper Foundation Inc., and vice president of the Black-Clawson Co., revealed that, for the first time, five scholarships for 1961-62 will be available to freshmen students entering the Syracuse Forestry College this fall.

At the board meeting, Dr. Hardy L. Shirley, dean of the Syracuse College of Forestry, traced the rapid growth of the Foundation, established only last October. During the 1960-61 college year, the Foundation awarded 20 individual scholarships amounting up to $450 each to sophomores, juniors and seniors majoring in pulp and paper technology at Syracuse.

Prof. F. W. O'Neil, chairman of the Department of Pulp and Paper Technology at the college, said the Foundation is presently composed of 24 corporate and over 70 individual members. The second annual meeting of the Foundation will be held Oct. 27 at Syracuse.

W. B. Morehouse, vice president, Nopco Chemical Co., Newark, N. J., is Foundation vice president; Prof. O'Neil is secretary, and George H. Haines, College of Forestry, is treasurer.

**Yale's Forestry Seminar** will be held in Seattle Oct. 23-27. The College of Forestry of the University of Washington will cooperate with the Yale University School of Forestry in presenting this 17th Industrial Forestry Seminar. The topic is "Financial Management of Large Forest Ownerships" and each of the five days will be devoted to a discussion of some phase of this under outstanding leaders in the field. Two of these men are Robert V. Hansberger, president of Boise Cascade Corp., and John Fedkiw, forest economist at the Pacific Northwest Forest Experiment Station.

Enrollment in the seminar is limited to 20 men whose experience qualify them. For information write to: Prof. Z. W. White, Yale School of Forestry, 205 Prospect St., New Haven 11, Conn., or Dean Gordon D. Marckworth, College of Forestry, University of Washington, Seattle 5, Wash.

**The Pulp Technology Institute** program opens at the University of Maine July 10, according to Professor Lyle C. Jenness, head of the university's chemical engineering department and director of the Institute.

John C. W. Evans, editor of Paper Trade Journal, graduate of Mount Allison University in New Brunswick with post graduate work at McGill University, will be the first speaker. The pulp technology institute, which lasts three weeks, is sponsored by the University of Maine Pulp and Paper Foundation and the University. It will be followed by a three-week program on paper technology.

TRUSTEES OF MIAMI UNIVERSITY PULP & PAPER FOUNDATION: (left to right, seated) P. S. Cade, Harding-Jones Paper Co.; Calvin F. Lloyd, Diamond-National Corp.; Howard E. Whitaker, Mead Corp.; C. E. Brandon, Miami University paper technology program director; C. C. Fracker, representing Dwight J. Thomson, Champion Paper & Fibre Co.; (standing) Bernard H. Bamer, Stone Container Corp.; Kenneth P. Geohagen, Howard Paper Mills; Harold M. Annis, Oxford Paper Co.; William Beckett, Beckett Paper Co.; R. P. Bertschy, Kimberly-Clark Corp.; and R. W. Herr, Fox Paper Co.

# make cleaner paper with NOPCO® DEFOAMERS backed by Nopco know-how

One of the causes of a bad run of paper can be foam. Bubbles that carry fiber, size or color on their surface burst and leave light spots. Those that carry filler or dye leave dark spots. Either way, the sheet won't pass inspection.

Many variables contribute to foam formation. Since each mill has its own distinct foaming problems—because of differences in equipment, type of water, chemicals used and running speeds—it takes a wide range of defoamers to meet them all. Let your Nopco specialist work with you to develop the best system for your conditions. Write for specific information and for literature.

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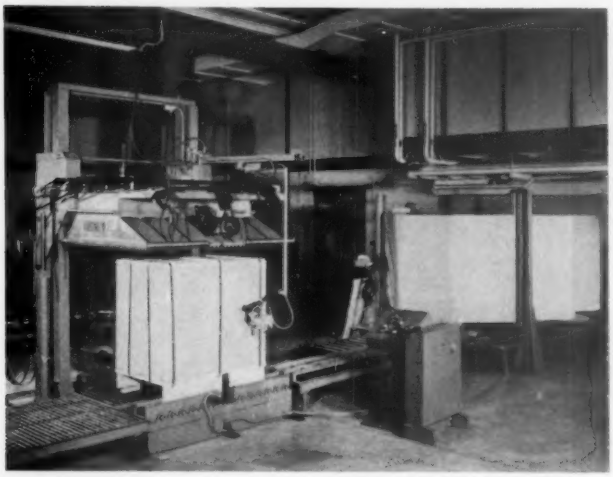
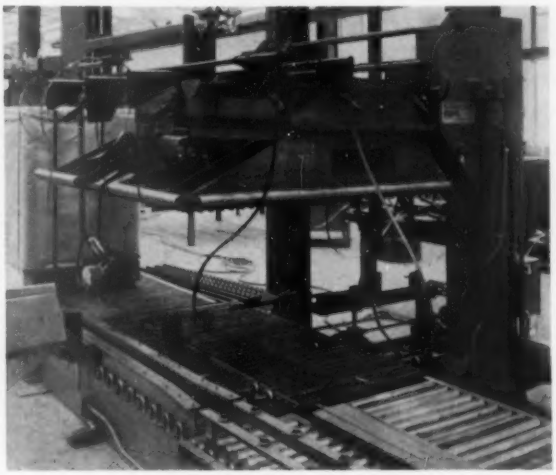
# Skid packager does job in half the time





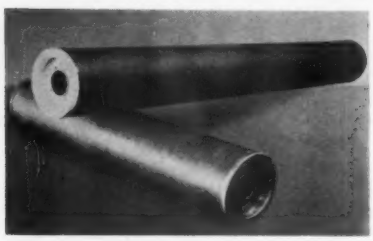
*Applications:* Station holds skid with 20,000 lbs. compression.
*Features:* Signode Steel Strapping Co. has developed a two-unit, semi-automatic system which tests indicate virtually eliminates paper slippage in transit, a major cause of shipping damage. At a wrapping station, paper on a roll stand is threaded through guides and stretched across a conveyor to a wrapping paper clamp. When the skid clears the station, the wraps are pre-draped around the package. Brake is applied to the roll stands, the paper is cut at guides, and the clamp is released. Wrapping is completed in about two minutes. Straps, held in the path of the wrapped skid, are pre-draped length wise around the skid as it moves into the compression machine.

To insure proper alignment with an automatic notch feeding device, the skid is funneled into position by a powered conveyor skid guide and stopped when a removable notch indicator makes contact with a microswitch. A green light indicates when a "sabre" from the notch feeder is fully extended and ready to channel strapping through the skid notches. The Signode CSF20 holds the skid with 20,000 lbs. compression, and the operator applies straps with an all-power combination strapping tool.

After completing strapping, the operator lifts the platen and power clears the station for the next skid. Two men finish wrapping after wraps have been pre-draped around the skid. Then, while one completes compression and strapping, the other prepares the wrapping station and skid for the next cycle.

The first skid packaging station built is in operation at a paper mill. It has one notch feeding device, but later models will have three and five notch feeders.
***Supplier:*** **Signode Steel Strapping Co., 2600 N. Western Ave., Chicago, Ill.**

## Film-paper core
**. . . for critical materials**

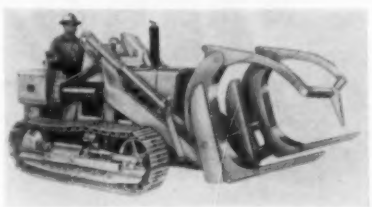


*Applications:* For winding films and papers in lengths up to 100 in.
*Features:* A resin bonded blended fiber, the CU-3500 core is applicable for operating conditions up to approximately 300°F. The core is designed for winding Mylor, cellophane, glassine, cigaret paper and thin printing papers, and can be manufactured to customer's required strength. Diameter is now limited to 15 ins., but can be enlarged to specifications. The resin fiber imparts controlled surface features necessary in critical material winding. The cores can be shipped with specified metal ends or spiders or void of metal parts.
***Supplier:*** **Sonoco Products Co., Hartsville, S.C.**

## Plastics production upped
**. . . for pulp-paper industry**

*Applications:* Fiber glass reinforced plastics for use in bleach, digester, recovery and evaporator areas—such as washer hoods, ducts, fans, mixers and scrubbers.
*Features:* Haveg Industries, Inc., world's largest moulders of plastics, are accepting orders for light weight, corrosion resistant and non-flammable plastics to industry specifications.
***Supplier:*** **Haveg Industries, Inc., Wilmington, Del.**

## Loader attachment
**. . . with dual grapple arms**



*Applications:* Fork lift and log loader attachment for the John Deere 1010 crawler loader will handle pulpwood, sawlogs and lumber.
*Features:* The 850 attachment is a heavy duty loader with a smooth center box section for load protection. The box-section masts are built with a continuous radius for easy log loading. Protected hydraulic cylinders are inside the masts. Upper-grapple arms feature a replacable alloy steel cross-grapple. The 850 can be purchased as a basic fork lift; . . . **turn to p. 76.**

# + 20%

**On the day after startup the guaranteed output was exceeded by 20%, indicating conservative design and excellent workmanship. Our illustrations show this special machine for making lightweight papers of 12 to 36 lbs. (20 to 60 grams) 24x36-500 and creped papers at particular high speeds.**

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# Buff Natwick joins engineering firm

HOUSTON—Albert G. "Buff" Natwick, former vice president and resident manager for the East Texas Pulp and Paper Co., and for many years assistant manager of the nation's biggest specialty mill, Crown Zellerbach, Camas, Wash. has joined the staff of Brown & Root, Inc., according to Herman Brown, president.

Mr. Natwick is widely known in industrial and governmental circles as one of the leading paper men in the nation, Mr. Brown said. "We are fortunate in obtaining a man of his stature as a senior consultant." Mr. Natwick retired from daily responsibilities as vice president and resident manager Eastex on June 15 but will still serve this firm in a consulting capacity. He joined Eastex in 1953 to assist in design and construction of the mill at Evadale, Tex., serving later as resident manager and vice president in charge of production. He was dean of the Crown Zellerbach Paper School, and co-author of text books on pulp and paper manufacturing. Mr. Natwick is a native of Wisconsin Rapids, Wis., and a graduate of the University of Chicago. ■

NATWICK

# Dr. Van Nostrand is pres. of Merrimac

LAWRENCE, MASS.—Robert J. Van Nostrand has been named president of Merrimac Paper Company, Inc., one of the country's oldest manufacturers of kraft papers.

Formerly with Brown Co., Dr. Van Nostrand has a broad administrative, marketing and technical background in the industry. Graduating with honors from Lawrence College in 1939, he received his a.m. and ph.d. in pulp and paper technology at the Institute of Paper Chemistry.

Joining Brown Co.'s Research Department in 1943 where he was involved in the development of specialty grades of kraft converting papers and associated pulps, Dr. Van Nostrand was transferred to the company's New York sales office in 1945. Moving on to Chicago in 1947, he was responsible for technical services and the sales of specialty pulps and papers. In 1955 he was appointed the administrative assistant to the vice president in charge of sales at Brown's headquarters in Boston. Since then he has held increasingly important executive positions with the parent company and its subsidiaries, including vice president of Resi-Chem Corp., Swanton, O.

President Van Nostrand and Board Chairman Donald J. Hurley, said Merrimac will continue to manufacture a wide range of technical papers. "Increased emphasis, however, will be placed on the development of specification papers to meet the ever growing needs of convertors, and of new, expanding industries, they said. ■

NOSTRAND

# Johnstone joins Sutphin in pulp post

CINCINNATI—Lewis K. Johnstone, long identified with woodpulp marketing activities in the United States and abroad, has joined the I. V. Sutphin Co. with responsibilities to direct the expansion of its woodpulp sales and service, it is announced by Stuart B. Sutphin, Jr., president. Mr. Johnstone will make headquarters in the main offices of Sutphin at 2105 Union Central Bldg., Cincinnati 2.

The Sutphin company has long been in the papermakers' supply business and it has branches in a number of the Southern States.

Mr. Johnstone is widely known in the pulp associations of the industry. For the past six years he has been with Champion Paper & Fibre Co., Hamilton, O. He resigned from his own sales company, the Flow Equipment Co., which he operated from 1949 to 1955, to join Champion as its director of purchases. In 1959 he became director of pulp marketing, in domestic and overseas markets, for Champion. While not a major factor in pulp markets, his work with Champion provided experience in the field.

A cum laude graduate of Dartmouth, 1941, and with m.c.s. degree from its Amos Tuck business school, he served in the Navy from 1942-6, finally as lieut. commander. He was with Cincinnati *Enquirer* from 1946-1949 when he formed his sales company.

# Harper made v.p. at R-W Paper Co.

LONGVIEW, WASH.—Robert E. Harper has been elected vice president-general manager of R-W Paper Co., Longview, Wash., glassine-greaseproof firm jointly owned by St. Regis and Weyerhaeuser. Mr. Harper has been manager of the mill since it was built by Rhinelander (now part of St. Regis) and Weyerhaeuser. He was former plant engineer of the Rhinelander mill in Wisconsin.

Other promotions at the R-W mill —Harry A. Hayward from sales manager to vice president, sales; Gareth E. Rouse from assistant treasurer to treasurer. ■

**continued on page 60**

# **SARAN LINED PIPE** carries 50,000 gal/day of $ClO_2$ for 5 years—only 1 elbow replaced!

More than 1100 feet of Saran Lined Pipe continuously carries highly corrosive chlorine dioxide—in both gaseous and solution form—for West Virginia Pulp and Paper Company's Covington, Virginia, plant. Over the past five years, this line has carried more than 18,000,000 gallons of this corrosive material. *Not a single length of pipe has failed from corrosion*—only one elbow has had to be replaced!

"In our experience, Saran Lined Pipe provides maximum resistance to corrosive liquids, and the best dollar value in terms of original cost and maintenance costs," says Superintendent E. K. Scholz.

"One advantage of Saran Lined Pipe—in addition to its corrosion resistance—is outstanding thermal tolerance. Sudden changes of temperature over a wide range won't crack it. And we don't have to carry a large inventory of Saran Lined Pipe on hand . . . only a few feet of various pipe sizes, plus a small quantity of spare flanges and fittings."

When your plans call for piping systems that must be physically strong, with maximum resistance to corrosion, consider Saran Lined Pipe. Saran Lined Pipe, fittings, valves and pumps are available for systems operating from vacuum to 300 psi, from below zero to 200° F. They can be cut, fitted and modified easily in the field without special equipment. For information, write Saran Lined Pipe Company, 2415 Burdette Ave., Ferndale, Mich., Dept. 1571JJ-10.

**THE DOW CHEMICAL COMPANY** DOW Midland, Michigan

# MEETINGS

## . . . July

**University of Maine** Summer Institute, Orono, Me.—two sessions, July 10-August 17

## . . . August

**International Congress of Pure and Applied Chemistry,** Montreal, Can.—Aug. 9-11

**TAPPI** Lignin Symposium, Edgewater Beach Hotel, Chicago—Aug. 14-16

**TAPPI** Testing Conference, Queen Elizabeth Hotel, Montreal—Aug. 15-18.

**PIMA** New York-Canadian Div., Saranac Inn, Upper Saranac Lake, N. Y.—Aug. 31-Sept. 2

## . . . September

**TAPPI,** 11th Corrugated Containers Conference, St. Francis Hotel, San Francisco, Calif.—Sept. 6-8

**CPPA, TAPPI,** Fourth International Mechanical Pulping Conference, Edgewater Beach Hotel, Chicago—Sept. 19-21

**Northeastern Div. PIMA,** Poland Spring House, Poland Spring, Me.—Sept. 21-23

**British Paper and Board Makers Assn.,** International Fiber Bonding Symposium, Oxford, England—Sept. 25-29

## . . . October

**TAPPI** Deinking Conference, Hotel Harris, Kalamazoo, Mich.—Oct. 4-6

**PIMA Conn. Valley-TAPPI N.E. Section** Joint Conference, Equinox House, Manchester, Vt.—Oct. 5-7

**TAPPI,** plastics paper conference, French Lick Sheraton, French Lick Springs, Ind.—Oct. 9-11

**Southeastern & Southern Divs., PIMA** annual fall joint meeting, Jung Hotel, New Orleans, La.—Oct. 11-13

**Pennsylvania - New Jersey - Delaware PIMA,** fall meeting, Claridge Hotel, Atlantic City, N. J.—Oct. 12-14

**TAPPI Annual Engineering Conference,** Shoreham Hotel, Washington, D. C.—Oct. 15-19

**National Safety Congress,** annual meeting, Hotel Hilton, Chicago, Ill.—Oct. 16-20

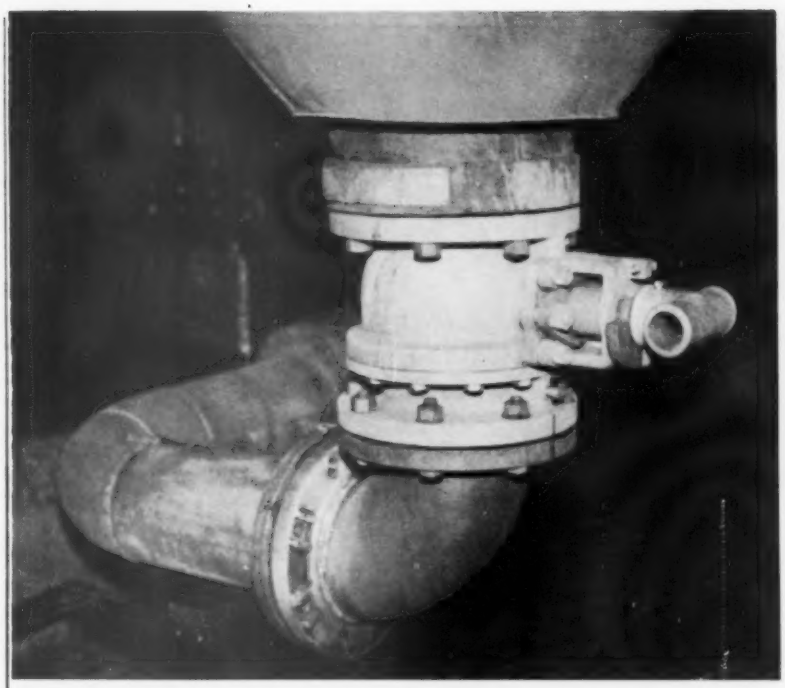
**Packaging Institute,** 23rd Annual National Packaging Forum, Biltmore Hotel, New York—October 18-22

**PIMA,** Miami Valley Div., annual meeting, French Lick Sheraton, French Lick, Ind.—Oct. 19-21

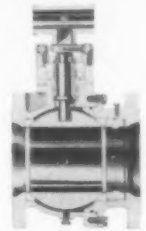
**National Paper Trade Assn.** fall convention, Conrad Hilton Hotel, Chicago—Oct. 22-25

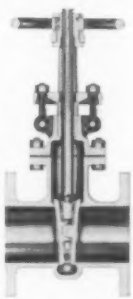
## . . . November

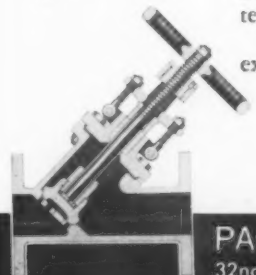
**TAPPI,** Annual Alkaline Pulping Conference, Rice Hotel, Houston, Texas—Nov. 1-3

PACIFIC BALL VALVES
installed on rotary digesters...







**The Ball Valve shown above was installed at the Crown Zellerbach Kraft Pulp Mill in St. Helens, Oregon, on a rotary digester as a blow down valve. Satisfactory performance is being experienced in this corrosive service under cooking conditions of 350°f., 120 to 125 p.s.i. The body material of the valve was a controlled, enriched alloy, especially compounded for the paper and pulp industry; the seal material was Kel-F.**

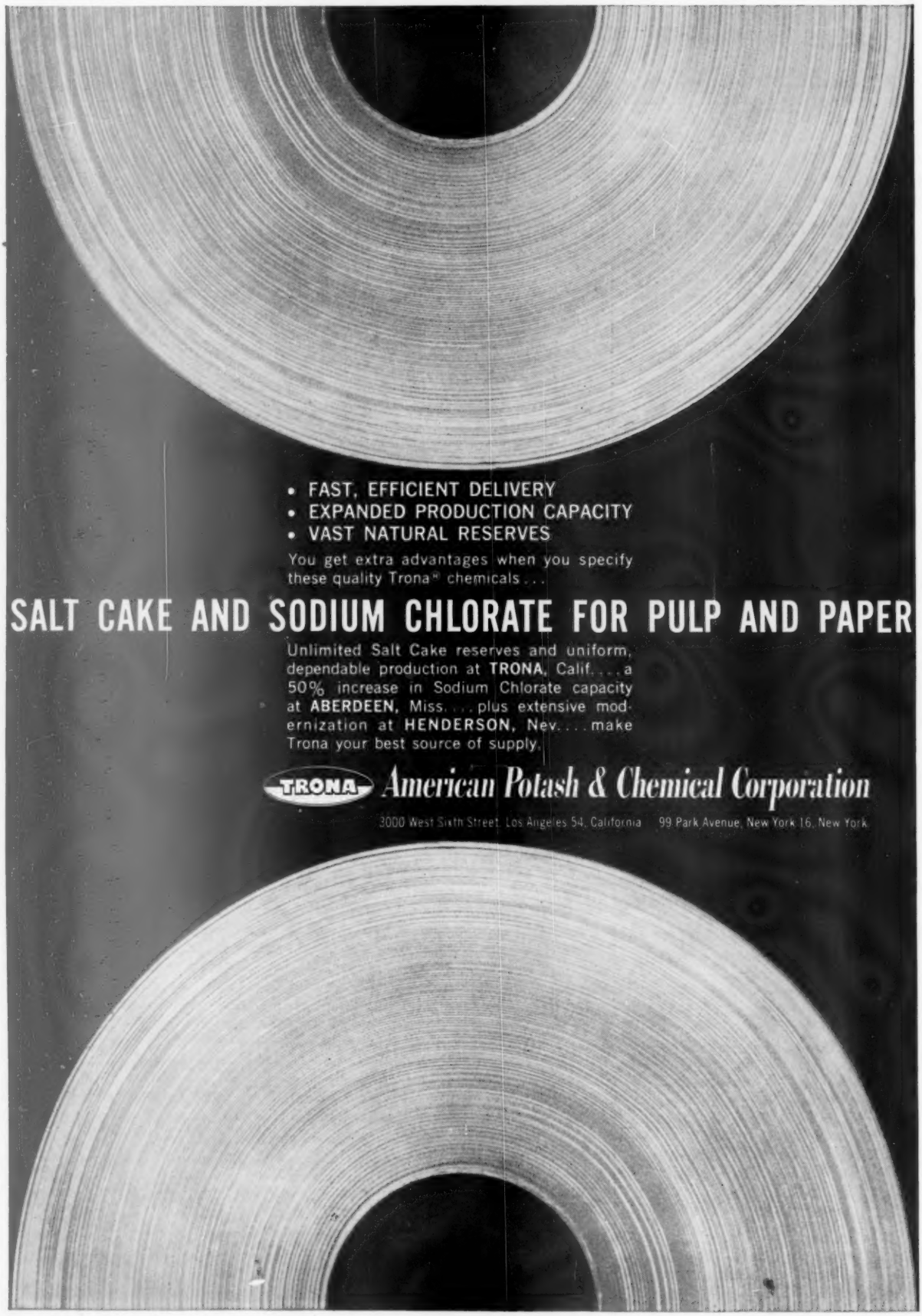
PACIFIC Ball Valves are well suited for handled abrasive slurries or suspended semi-solids because of their straight-thru, round, flow pattern—with seals protected from the flow. The quick-quarter turn action lends itself to economical pneumatic valve actuators. PACIFIC offers the widest range of standard body and seal materials...materials to cope with nearly every corrosive problem.

PACIFIC standard line of *corrosive resistant* valves are widely accepted in the paper industry. Two very popular models are shown at the left: Fig. No. 8550, a split-wedge gate valve, and Fig No. 700Y, a "Y" patterned globe valve.

Why not take advantage of PACIFIC's broad valve experience in the paper and pulp industry?

Write today for a sales representative or PACIFIC's Corrosion Resistant Valve Catalog SS-102 and PACIFIC's new Ball Valve Catalog BV-60.

PACIFIC VALVES, INC.
32nd and Walnut, Long Beach 7, Calif.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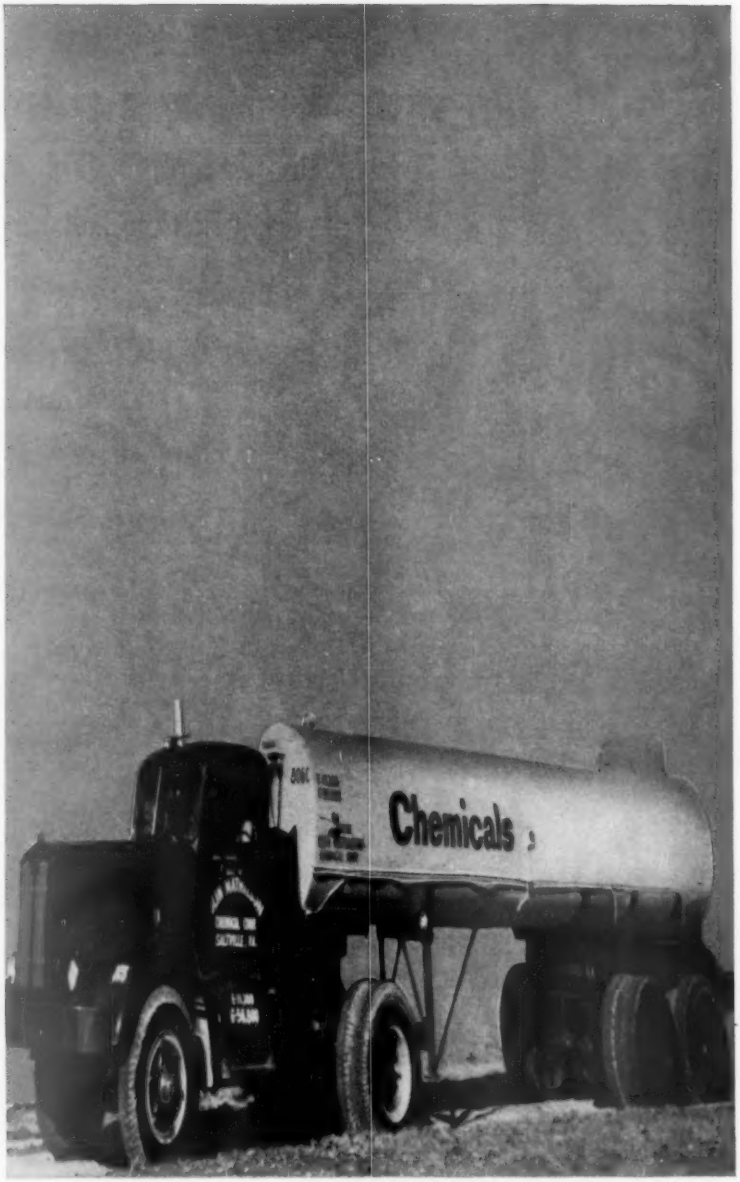
**SINCE 1925—A PARTNER OF THE PAPER INDUSTRY**

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PULP & PAPER

## FOCUS ON COATING:

# Race for Markets Quickens

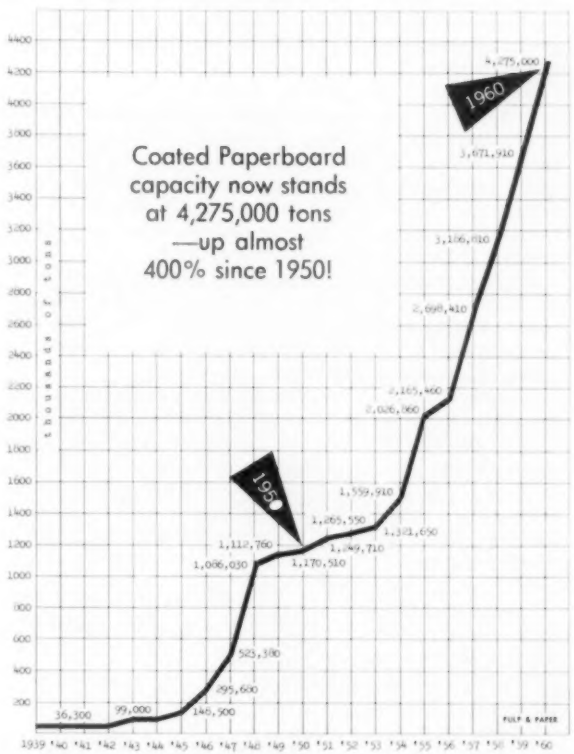
## New tools, techniques, materials under intensive study

By MAURICE R. CASTAGNE, Associate Editor

EXCITING AND SPECTACULAR new developments are taking place in coating. Very definitely, the U.S.A. coating industry, and world coating too, is in the midst of a violent upheaval. So violent, that today's coating techniques, tools and materials may be obsolete tomorrow.

When—or if—coating ever settles down, the industry may see radically new coating methods, tools and materials. The coating industry then will be as different from today's, as today's differs from yesterday's.

Because of the dynamic nature of today's coating, because of the swiftness with which changes are taking place, here is a look at some possibilities for the future . . .




COATING CAPACITY for paper and paperboard has risen sharply since 1950; from about 2,150,000 tons to about 6,592,000 tons; an increase of more than 300%. In this same interval coated printing paper capacity grew from about 1,020,000 tons to about 2,317,000 tons; while coated paperboard capacity has risen from an estimated 1,130,000 tons to probably more than 4,275,000 tons.

This increase has been concentrated in publication papers and in Southern paperboard. But while coated printing paper production has kept pace with capacity, producing about 1,960,000 tons in 1960 and operating at about 85% capacity, paperboard production has not. In 1960, coated paperboard production has been estimated at 900,000 tons (300,000 tons for coated cylinder board and 600,000 for coated bleached board). This was an operating rate of about 25% of capacity.

**This sharp swing to coating** has been dictated by increased competition. In the fierce competition to hang on to present markets and to win new ones, coating gives paper and board added advantages. Coated printing papers help bring four color reproductions to life; give pictures of advertised products a realism unmatched by uncoated grades.

Paperboard is coated primarily for printability, for grease and oil resistance and for appearance.

In this search for new products, for new uses for paper and paperboard, virtually everything is up for grabs and the one that comes most easily to mind is to coat the product. Evidently, this is what the industry has in mind, because a survey by PULP & PAPER shows that substantial grades of both paper and paperboard are candidates for coating in the next ten years.

**Future coated papers may** be concentrated in the lighterweight publication grades. Probably sooner than some expect, a 25 lb. base sheet with only 2½ lbs. of coating per side will be used by one major publisher. Other printing grades such as rotogravure, offset and catalog grades, including cheaper printing grades are also candidates.

## . . . Coating

**The hottest coated board trend** today is polyethylene coated milk cartons. Substantial tonnage is now developing in paper and board extrusion-coated with polyethylene. New coated milk containers are being made up to full gallon size. Polyethylene extrusion coating is being used for containerboard and heavy sack papers.

An indication of the market involved: Milk container production in 1950 was 218,400 tons. In 1960, it was 571,400 tons. If paperboard can capture the one gallon container market, it will boost this tonnage substantially.

**Potentials for coated new** grades of paperboard are tremendous, says some experts. They see coated board being used for packaging of liquids such as oils; corrugated for carrier stock and display cartons. The big use, of course, is packaging, but new product ideas are sorely needed. Other possible new uses: grey chipboard for sugar cartons; corrugated linerboard; folding boxboard for household products. Some say all foodboard grades. Special foodboard grades now amount to about 1,451,100 tons.

**The major coating development** of the past 5 to 10 years is probably the blade coater. Despite the fact that the blade coater has come into widespread use in the past five years, there is still much that is not known about it. Probably less would be known if it were not for companies such as Blandin who were willing to share their experience on blade coating.

If it has done nothing else, and it has done much more, the blade coater has created an awareness of the importance of good papermaking techniques. This theme has been stressed by coating experts: You can't make good coated paper if you don't make good paper.

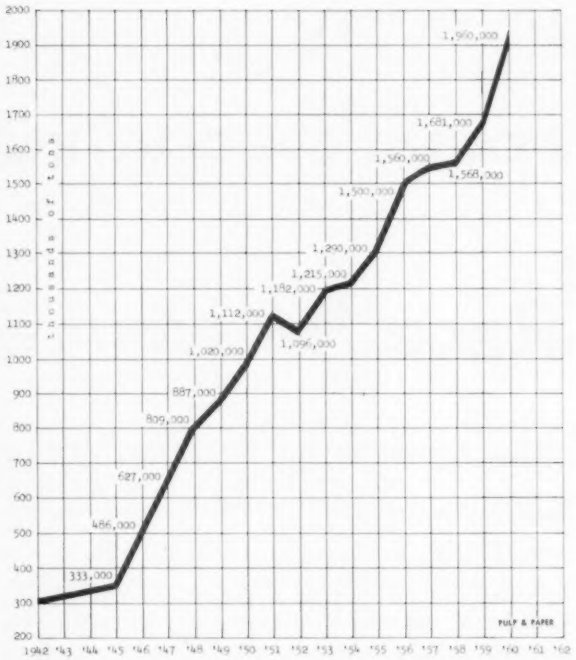
Variations on blade coaters are being made constantly. Rice Barton Corp., is reportedly readying an improved "Super Blade" coater. It will, they say, provide faster blade change, longer blade life, etc. The Black-Clawson Co. and Beloit Iron Works have their own versions of the blade coater. The Black-Clawson unit is called the Flexiblade and the newest unit to start up is now starting up at Newton Paper Co. It is an off-machine coater and also features air knife coating.

Champion Paper & Fibre Co. has its own version of the glade coated—an improved version of its rod coated which has had much success with coating board. One such installation has been described as "not nearly as critical as the blade coater with a lot more leeway."

**The blade coater will continue** to be the major coating tool of the Sixties, according to some coating experts—BUT. Modifications are needed. Here are a few suggestions by some mill men: High speed, non-wearing blade, coating without surface defects; ability to vary coat weight by adjustments on the coating head, not just by changing speed or viscosity; blade changes should be simple and fast. One solution may be to enclose the pond and some companies have done work in this area already and newer developments can be expected along this line.

**Dixie's coating boom swings** out from paperboard coatings and is now extending into printing papers, such as offset. If overcapacity in coated paperboard continues, look for an acceleration of this move.

Little was known about paperboard coating—just that




**COATED PRINTING PAPERS have had sharp growth; new markets may push higher. In 1960; 1 billion books were sold; 1 million paperbacks/day.**

it was substantial—until a short time ago. This situation was changed at TAPPI's 10th Coating Conference in Boston in 1959. At that time, Dr. William H. Aiken, then director of research, Diamond Gardner Corp., and now director of research and development, Union Bag-Camp Paper Corp., gave the industry a whole new area of knowledge on this subject. He conducted a survey of paperboard capacity—something which many people had told him couldn't be done—and surprisingly he got the answers he wanted. At that time, Dr. Aiken estimated that coated paperboard capacity was about 3,474,850 tons. Since then, PULP & PAPER estimates that another 800,000 tons capacity has been added. This is capacity and not production.

**Non-glare or dull coated** papers have had some acceptance in recent years and some in the industry believe this will definitely be a trend in the Sixties. Why? For years printers have been saying it would be "wonderful if we had all this fine printability and could get rid of the glare." Some mills have accomplished this by selecting pigments that didn't polish and by trick supercalendering methods. The trailing blade coater is credited by some with providing a good surface with less supercalendering that left more compressibility, opacity, brightness, strength and better printability.

At present, however, high gloss denotes quality and it is hard to change public opinion. The answer says one observer, is with the advertiser who still demands high gloss sheets.

**Gloss calendering looks** promising as a new method for finishing coated papers. There are at least eight companies working on various approaches to this idea. Basically, explains one mill man, the purpose is to achieve high gloss effect without damaging the sheet. Some systems would do this while the coating is still in a fluid or wet state, others, when the coating is dry. The main idea is to plasticize or melt the coating and reform it and polish it on a chrome plated roll.

# Chemicals, Synthetics Improve Felts

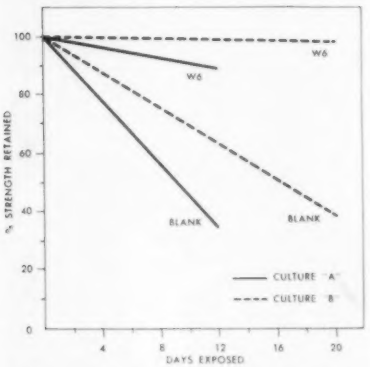



FIGURE 1: Effect of chemical treatment on bacterial erosion of wool.

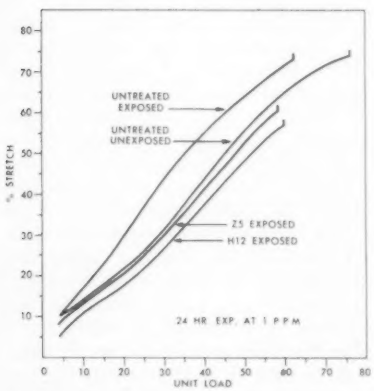



FIGURE 2: Effect of chlorine on the tensile properties of wool.

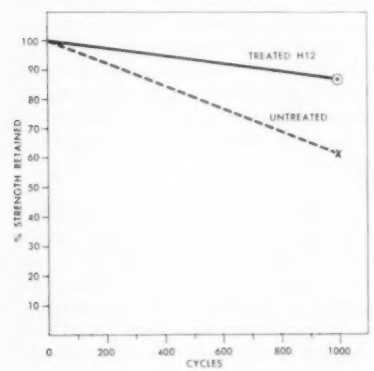



FIGURE 3: Effect of treatment $HI_2$ on the resistance of wool to abrasion.

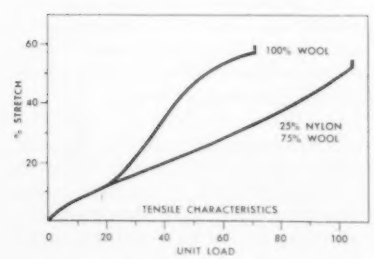



FIGURE 4: Tensile properties of an all wool felt as compared with a felt that contains 25% nylon.

## Main problem is getting right proportion of maximum strength, openness and finish

By CARL GORDON, Chief Chemist, Albany Felt Co.

CHEMICAL TREATMENTS and synthetic fibers are becoming more important to the felt designer in producing paper machine felts with maximum strength, openness and finish.

Providing these three qualities in the correct proportions for each position on a paper machine is a main problem of the felt manufacturer.

Often a correction in any of the three qualities may set up a counter problem. Modifications for improved finish may result in a weaker felt; modifications for improved strength may make the felt too close.

If an otherwise satisfactory felt doesn't have the required strength, the obvious move would be to larger or additional lengthwise yarns. However, inclusion of more or larger yarns may adversely affect openness and finish.

**Chemical treating can make wool** more resistant to bacteria, chlorine, or alkali. Figure 1 shows the strength loss of felts in two series of tests with different bacterial cultures. With culture "A" the treated felt lost 12% of its strength when incubated 12 days; the untreated felt lost 66%. With culture "B", the difference was more dramatic after incubating for 20 days. In this case the W-6 treated felt lost only 3% of its strength in contrast to 62% for the untreated felt.

Figure 2 shows the stretch-load curves for treated and untreated felts exposed to solutions containing 1 ppm of available chlorine for 24 hours. This exposure caused the untreated felt to stretch more than the original felt. In contrast, treated felts, after the same exposures, still showed more resistance to stretch than the original.

This increased resistance to stretch for treated felts makes them act as though they had been made with larger yearns. Consequently, the designer often can provide a felt with greater strength, without affecting openness or finish performance.

Where mechanical wearing (such as that caused by friction over the suction boxes and roll slippage) produces fast felt deterioration, chemical treatments often help. For severe wear cases, a resin treatment can be used. This gives the fibers a minute protective coating, which makes them appreciably more resistant to abrasive action (see figure 3) without significantly affecting openness or finish. Figure 3 shows that after 350 cycles on an abrasion tester the treated felt had retained 52% of its strength in contrast to 36% for the untreated felt.

**A newer field of design** usage, synthetics, has also made better felt performance possible. Synthetic fibers are stronger than wool (see figure 4); are more resistant to abrasion; are not subject to bacterial attack, and are more resistant to chemical exposure.

By using a scientifically blended percentage of synthetics these favorable properties can be incorporated, without significantly affecting openness or finish.

There is one basic drawback: Synthetic fibers do not "full," and tend to "pack down" more readily than wool.

Chemical treatments and synthetics have improved felts immeasurably over the past decade. Recently one mill questioned the value of the synthetic blend in its felts and ordered for comparison an all-wool felt identical in character to felts used by the company several years earlier. The superintendent was surprised to find that the life of the all-wool felt was less than half of what he was getting with the synthetic-content product. Greater speeds and changed machine conditions, allowed for in the designing of the latest felts, were too much for the old-style felt.

Chemicals and synthetics are specified by the felt manufacturer when it is indicated they are needed. The key to the final design decision rests with the answer to a single question—can this particular design help provide the papermaker with more salable tons of paper per day? ■

# International Paper Shifts to New Goals

## from mill-oriented mass production to diversified and sales-oriented organization—new grades, more converting, more coating for new markets—acquisitions of other firms, more foreign affiliates, West Coast investment are all key moves in this change in direction

"Healthier to operate somewhere under 100% . . ."—WILLIAM A. HANWAY

By WILLIAM A. HANWAY, Secretary, International Paper Co.

THE DECADE of the Fifties just behind us has been a period of considerable growth and prosperity . . . of increasing competitive pressures and of shift and diversification in products and markets. But perhaps more than anything else we in International will remember the Fifties as the years of integration in the paper industry—the years that led our company to move from its traditional patterns as a mill-oriented or mass production organization to become an increasingly diversified and sales-oriented company.

Let us take a closer look at how we have been moving over the past five years. During that period the International Paper Cos. invested over $500 million in manufacturing plant, equipment and woodlands. About $240 million of that went for new paper mills, new paper machines and new converting plants, including plant acquisitions. About $140 million more was spent to increase flexibility of existing plants, to improve operating and competitive efficiency, to cut costs and to replace worn-out plants. Another $100 million plus went for woodlands, woods improvements and woods equipment. These figures represent cash money paid out, except that properties acquired by merger are included at their $40 million book values to the predecessor companies. The figures do not include the increase of nearly $75 million in our working capital.

**The money plowed back** into plants has bought four things for IP and its stockholders: First off:

1. In grades and markets which were the backbone of our business in the 1940s, it has further strengthened competitive efficiency and has kept us in shape to take the best possible care of existing customers.

2. Added 935,000 tons to the annual capacity of our paperboard, paper and market pulp mills.

3. Brought us a lot of new converting operations.

4. Rounded out our woodland acreage and provided new equipment and improvements to increase efficiency and lower the cost of woodland operations.

Production from that 935,000 tons of added mill capacity has gone largely into new grades or into new markets: 1, locally produced newsprint for Southern markets; 2, locally produced kraft paper and container board for the Canadian market; 3, bleached sulfate board and paper for a host of new and expanding markets; 4, directory papers and coated publication papers.

As a result there has been a marked increase in plant efficiency and flexibility and important savings in transportation costs. Diversification has been widened and the product mix improved. To a large extent the new grades are made exacting in requirements, less vulnerable to competition, and sell in higher price ranges.

We have stepped up our research activities. All three of our major laboratories—Glens Falls, N.Y., Mobile and Industrial Cellulose Research Limited in Hawkesbury, Ont., have played an active part in the program and we have utilized additional talent at some of the commercial and university laboratories.

### Acquisitions have helped

1. Lord Baltimore Press Company provided a valuable source of technical know-how and an ideal proving ground to develop and shop-test improved grades of paperboard and paper for the important and fast-growing consumer goods packaging industry.

2. The organization we acquired from Muirson Label Co. is doing the same thing for us in that field.

3. Close association with Lily-Tulip in the Red River Paper Co. brings a pooling of know-how that will make it possible to develop improved grades of bleached kraft board for cups, plates and food containers.

4. Canadian International has acquired Dominion Cellulose Ltd., an organization with wide experience in facial tissues, toilet tissues and surgical paper specialties. A disposable paper diaper has just been introduced.

**Great progress in coated papers** has been made. Substantial tonnage is now developing in paper and board extrusion-coated with polyethylene. We expect before long to be produc-

The above article consists of major excerpts of an address made recently by Mr. Hanway before the Boston Security Analysts Society.

ing a Pure-Pak milk container in the full gallon size—the first that large. We are using polyethylene extrusion coating on container board and heavy duty sack, which can now be used for products which before had to be packed in other type containers.

Our mills and laboratories have been working with many types of plastics and other coatings. The cover of our 1960 Annual Report is printed on Springhill Coated Cover-Bristol, a brand new stock which is being produced at our Moss Point, Miss., mill.

Since early this year we have been marketing a new prestige line of watermarked business papers under our trade-mark. This line now includes specially developed mimeograph and duplicator papers as well as quality bond and ledger papers.

We now offer many special grades of linerboard—in white and pastel colors . . . new liner boards specially treated to eliminate abrasion, to resist the effects of mold and moisture, and to release tacky materials cleanly and swiftly.

In 1955 we had 26 converting operations in the United States and four in Canada. We started 1961 with 47 in the United States and seven in Canada, plus four more under construction in the United States. Of the 24 added plants, four were acquired and the balance built.

Production of converted paper products in 1960 was up 167,000 tons —more than 28%—from 1955. And here too it has not been just a matter of quantitative expansion. Diversification of product and diversification of markets have been even more important. And in converted products—as in primary products—we now make an increasing tonnage of the products that are made to more exacting specifications and sell in the higher price ranges.

**Our new foreign affiliates**

The recent Grace acquisition includes one bagasse paper mill in Puerto Rico and another, jointly owned with Grace, under construction in Colombia. Otherwise these foreign affiliates are almost entirely in the converting field. In all the overseas markets served by these operations demand for their products is growing at a rate markedly faster than in the United States.

Total production by our converting plants in the United States and Canada reached 754,000 tons in 1960. Add 10% to that figure for clippings to get the tonnage of paper and board consumed. Additional tonnage went to our European and Mediterranean overseas affiliates.

Well over a third of our 1960 production of "convertible" primary tonnage was cut up by our own companies and their affiliates—in the United States, in Canada and overseas. That percentage has been moving up steadily and we expect to see it keep on moving.

**There is more to be done**

especially on the West Coast. The Long-Bell merger and our subsequent West Coast timber purchases were undertaken primarily to provide raw material supplies for a future paper mill out there. Long-Bell's lumber and plywood business has contributed somewhat to earnings and substantially to cash flow. Those contributions fluctuate—pretty fair in 1956, 57 and 59; pretty skimpy in 1958 and 1960; and there will undoubtedly be future years when (as in 1955) lumber and plywood operations will give our earnings quite a boost. We will not realize the full year to year return we expect on our West Coast timber investments until that new mill comes in.

**Talking about current earnings**

and earnings prospects, there is one point on which I wish to touch. Depreciation on all United States plants added since Jan. 1, 1954, is figured on the declining balance basis. Each year since then this change in basis has had an increasing effect on current earnings. You can get a clearer picture of the trend if you eliminate this variable by measuring earning power at the cash throw-off level, that is after all charges except provision for depreciation and depletion.

Net profits of $71 million last year were not too impressive against the $58 million earned before extraordinary items in 1953. They were considerably less so against the 1955 peak of $92 million.

Cash throw-off, however, was $131 million in 1960, a respectable increase over the $84 million 1953 figure. Furthermore, the $141 million peak of cash throw-off was reached in 1959. The 1955 figure was $137 million and that included a record $16 million from Long-Bell. The Long-Bell business last year was at low ebb. For the rest of our business, cash throw-off in recession 1960 topped every previous year except 1959.

Since 1955 we have made heavy investments in plant and equipment which enable us to make new products, to serve new markets, to improve the efficiency and the competitive position of existing plants—and also in timberlands to support future as well as present operations.

IP has been establishing a strong base of additional earning power which will minimize for us the effects of any further sag which may develop in the economy and should demonstrate itself strongly in the next general business upswing.

Recent years have been a bit on the lean side for the paper industry. The over-enthusiasm of 1955 and the first half of 1956 generated highly ambitious plans for expansion of plant capacity. Additional capacity has been coming on stream faster than the actual increase in demand could absorb it. The over-capacity problem has been more severe for some grades than others but the fact remains that recently most segments of the industry have been fighting for volume with little regard for profits.

**Narrowed profit margins**

in recent years have rubbed off some of the paper industry's excess glamor. It is becoming more difficult and more expensive for people to borrow money to put into the paper industry. A slowdown in plant expansion coupled with the normal growth in demand should in time produce a more reasonable balance between capacity and consumption, permitting prices to reflect more accurately the increases which have already occurred in basic labor, raw material and other costs.

We certainly do not anticipate an early return to the kind of all-out production the industry experienced in 1955 and 1956. That was an abnormal situation. It is much healthier for an industry such as ours to operate somewhere below 100% of capacity. This provides margin for seasonal fluctuations in demand, provides a cushion for the development of new products and permits customers to plan for their own growth requirements with confidence in their source of supply. Eventually, every company will learn that the cost of carrying that margin of capacity is an essential element to be reflected in its pricing.

**The difficult market conditions**

that marked most of 1960 have continued so far in 1961. You already know that our first quarter earnings were down over 13% this year from 1960. Operating earnings for the second quarter will also be down this year from last. We feel confident that the paper industry will experience some improvement in demand during the balance of the year. However, prices are unsatisfactory and, with increases in capacity that are scheduled during 1961, there will be little if any improvement in operating ratios. Earnings will still reflect the presence of substantial overcapacity and the continuing cost-price squeeze.

How 1961 as a whole will compare with 1960 will depend entirely on whether general business picks up and on the extent, rapidity and continuity of the pick-up. ■

*The Reed Group has evolved policies that could be applied advantageously by pulp-paper elsewhere . . . This is the opinion of Director Philip Walker who describes techniques of . . .*

# Management: the British Way

By PHILIP G. WALKER, Managing Director, Albert E. Reed & Co., Ltd.

—London

THE EVOLUTION of British company law and practice has provided a basis for control and organization of large numbers of people and activities, which has not been bettered in any other sphere. The best of the system might well be studied and applied in other places and perhaps even in government. It has the great advantage of enabling authority and responsibility to be put into the hands of one man, so that that authority can be exercised over considerable periods without interruption and the sanction remains that he has periodically to report on his activities to a Board of Directors which has the final right to hire or fire him.

This is a very important sanction, because the occupational hazard of megalomania in managing directors is much more prevalent than some people believe. For this reason it is highly desirable that great attention be paid to the constitution of a board of directors, especially in larger companies where the delegated responsibility to the managing director gives considerable power over large numbers of people.

The best boards should include some independent outside directors and some executive directors.

If the board is entirely composed of people who are not connected with the day-to-day operations of the company it will become too remote from its activities and policies, and too much dependent upon the managing director or general manager as the case may be. It will then find that it is no longer in a position to exercise fairly the important sanction to which I have previously referred, and the managing director or general manager will become too powerful without the necessary control—"power corrupts and absolute power corrupts absolutely." If the board is composed only of people who are working inside the company, most of them will be subject to the day-to-day management and instruction of the managing director and may find it difficult at board meetings to exercise judgment in a properly independent manner.

As the board delegates most of its authority and responsibility to the managing director, he faces the problem of building and running an organization where he in turn is able to delegate as much of his responsibility as possible, at the same time, retaining compact control of the operation as a whole. Broadly speaking, he is faced with two rather opposed alternatives. The first is to retain in a tight central body as much control as possible and often this is not only confined to questions of policy and major decisions, but even to operational matters affecting circumstances and individuals far down in the organization. The second alternative is to endeavor, maintaining the degree of central control necessary to provide cohesion in the operation, to delegate authority and responsibility divisionally, departmentally and sectionally to the maximum extent.

Although these two alternatives are seen to be in striking contrast, in practice it is generally found that the adoption of one is not possible without introducing certain elements of the other.

We can call the one alternative centralized control, and the other decentralized management.

### Advantages of Decentralization

I personally have not the slightest doubt that the maximum degree of decentralization is the method which gives an organization the greatest freedom for development and promotes growth and acceptance of responsibility in the people involved in the operation.

In the Reed Group, we are divided into three major operational divisions: 1. paper and board manufacture, 2. packaging, and 3. other converting operations.

Under each heading we are involved in many different activities. It is clear that it is impossible for central management to be in touch with anything but the wider aspects of policy and activity, and certainly a managing director cannot possibly hope to know anything but the principles of the various technologies that are employed. His main pre-occupation must therefore be to build, organize and control a team that is adequately equipped from the administrative and technical standpoint to ensure the Group operates efficiently.

We attempt to delegate to the maximum degree in order to utilize and develop fully the skill and ability of our staff and employes.

Having said this, it is obvious that certain matters must be controlled centrally, and in our Group these are —policy, finance, personnel, research and development, purchasing, and general commercial activity including secretarial and accountancy control. But apart from policy and finance none of these matters is wholly controlled by central management except from a functional standpoint.

All these matters are standard for central control in almost any business, but the importance of any one of them varies with the type of business. For instance, in the Reed Group, raw material represents nearly 60% of the total cost of production, and the purchasing of woodpulp, the main raw material, requires a high degree of specialization and day-to-day contact with the supply situation over the whole world.

### Policy of Personnel Control

I also attach great importance to central control of personnel policy, to insure a consistent approach throughout the Group, for without this we may lay ourselves open to a considerable amount of internal discontent, involve ourselves in difficulty in negotiating with unions, and finally restrict our ability to transfer people within the Group itself.

However, we take pains to see that central control is the absolute minimum to insure efficient Group operation. We attempt to decentralize operational management to the divisions, companies and branches, subject only to central control by capital budget approvals and main policy decisions.

The divisional director has full responsibility for his own activity under the headings of administration, production, sales, development and commercial organization, and his staff, being entirely under his control, have a functional responsibility to headquarters staff. The divisional director, in turn, endeavors to transmit as much authority and responsibility under the headings I have mentioned to his mill, company and branch managers.

Co-ordination of the divisional heads is primarily the responsibility of the managing director. Executive meetings are held to consider problems affecting more than one division or the Group as a whole, to transmit group policy and examine divisional and departmental results.

In our organization, which employs approximately 18,000 people in 27 mills and factories, there are only eight people directly responsible to me. These are: three operational division directors, one purchasing director, one research and development director, one personnel manager, one secretary and one treasurer.

Where decentralization is the objective it is much more important that people all down the line understand the management pattern which is being evolved, and one must attempt to secure that the local pattern does not appear to be inconsistent with the whole. This is an ideal, of course, and very hard to achieve because in any given area the build-up of management is conditioned by the availability of people sufficiently trained to accept responsibilty and authority.

### Education, Training, Recruiting

After administrative organization, the most important matter with which a manager has to deal is education, training and recruitment.

Education in this country in the past has not been geared to producing the requirements of the business community. In the old days trade was considered to be something to which no gentleman applied himself, except from sheer necessity, and our schools and universities exerted themselves to train highly qualified lawyers, soldiers, churchmen, politicians, diplomats and professional men of all classes, but it was not thought that if a man was to enter business he required any special training at all. Even now many of the people responsible for education are completely unable to perceive the supreme importance of industrial and business activity in the welfare of our island community.

The fault, of course, does not lie entirely with the educational authorities because if one considers the conditions and methods of employment which were thought to be permissible in the industrial revolution, and for years thereafter, a comparison with the outlook of modern industry seems completely fantastic.

So many employers used to suppose that they were in business solely to make the maximum amount of money for themselves and their shareholders, regardless of the effect on the lives and circumstances of the individuals employed in the industry which they managed. This has long since ceased to be considered a justifiable approach by any enlightened businessman, but we are still fighting battles which are the legacy of those times.

Some time ago, former President Eisenhower in a major speech said, "The business of the United States is business" and in this country we must understand that that statement is equally true of ourselves if we are to survive. British industrialists were much later in recognizing a very important factory for growth in industry than their fellows in the United States. Years ago, U.S. industry realized that if it was to have an adequate number of recruits for junior and senior management it could not rely on the normal educational system to provide them, but must itself make some very active contribution to that end.

In this country we now accept this, and the training methods employed by most of the larger companies are a very good example of that change in understanding. It is now true to say that modern management recognizes as much responsibility to its employes as to its shareholders.

This is not just a matter for management, for it is essential for us to see that every category of employe involved in productive activity is trained to the maximum. That is why industrial schools are being set up within, and in conjunction with industral undertakings, enabling the men or women who wish to improve themselves and their future prospects, to continue their education and training. . . . turn to p. 46

## Group's Work Force Trebles in 10 Years

Philip Walker became managing director of the Reed Paper Group in 1951. Previously, he had been a partner in a firm of consultant accountants that served the Group. In the time he has been director, the Group's employment force has climbed from 6,000 to 18,000. Annual sales have risen £15 million to £73 million; assets, from £6 million to over £40 million. Reed is the largest employer in the British paper industry, with nearly 7,500 persons working at its principal English plant near Maidstone, Kent.

The Group started out in 1894 with a small newsprint mill at Tovil, Kent. Today it comprises some 20 companies and five divisions. It is associated with Kimberly-Clark, Ltd., Reed Paper Products of Australia, Tasman Pulp & Paper of New Zealand, Portuguesa de Celulose of Portugal, and a pulp and paper mill under way at Sande, Norway. With new acquisitions, Reed expects to up its paper and board capacity to 1.5 million tons a day.

**WALKER . . . *"It is unfortunate that industrial relations over a wide field are still conditioned by a few . . . outmoded attitudes of both employer and employe"***

### Reed Training Program

Towards this end, first, we have our central works college. Into this go boys and girls joining the organization and they must spend at least one or sometimes two years there, either part time or full time, on general education or the technical courses that are going to fit them for the jobs to which they will be drafted. This school caters for a permanent establishment of 500 to 600 pupils. They are subject to constant observation with a view to seeing that they get into the jobs to which they are most suited, and in this time we are able to select those of outstanding promise and see that they can continue the training without which they would be unable to develop their qualities to the full. If they wish to, from this school they can continue their higher training through the technical colleges with which our school is associated, and if they exhibit remarkable ability we provide facilities for them to go to university either in Britain or America.

We also run courses of instruction for all foremen and supervisors. They must attend lectures monthly, within the mills or factories in which they are working, and at periods during the year we arrange residential courses in management.

In addition, we take in men from the public schools and from the universities and put them through trainee courses. We run a bi-annual management conference which is attended by some 80 to 100 top managers within the Group.

Although we cannot fill a great many of the posts in top management by normal recruitment through the ranks, care is taken to see that any man of exceptional ability may graduate in this way to the highest job the company has to offer. At the same time we have to provide for the situations which cannot be filled in this way, by recruitment from outside.

We believe that this sort of outlook coupled with the interest which is taken in welfare, health, recreational activities, the securing of an employe's retirement with adequate pension provisions, the arrangement for all members of the organization to participate in the prosperity of the company through an end-of-year bonus or profit-sharing scheme, and the concentration by people at all levels on securing that the dissemination of information about the company's activity upwards and downwards throughout the organization will produce the best type of industrial relations it is possible to obtain.

A secret to which we have not as yet found the answer, and I have never discovered an organization which has, is that of being able to select with certainty at an early age the man who is going to be a top executive. As one of my Canadian friends put it, our only answer is to watch the forest grow and look for the tree that grows higher than the rest.

### Research and Development

Almost all modern large organizations now recognize the necessity for research and development if progress is to be continuous and a company is to maintain its place in a highly competitive field. Impetus is given to this by almost all governments, and the British Government encourages the setting-up of industrial research and development centers, but most organizations still have to spend very substantial sums of money each year on matters concerned with their own companies.

There seem to be no standards existing by which it is possible to judge the proper allocation of expenditure to research, and this varies from as little as 1% of turnover in some industries to 20% in others. Once, however, the policy decision has been taken, the measure of expenditure will be fixed by the activity, and over a period of years, by an assessment of the economic results. We cannot claim in our organization to have found any sure guide by any means, but at the moment we are spending just over 1% of our turnover. This is a fairly high proportion when it is recognized that 60% of our turnover is purchased raw materials.

Our first difficulty was to set up a research and development division which in its activity would demand the respect and co-operation of our production departments. This was, of course, primarily a matter of selection of the right man to run the division, and we regarded this as of such importance that our director of research and development is an executive director of the main board of the Group.

This is a great advantage as he meets colleagues engaged in all the other activities of the business and reports directly to the managing director.

The director of research is responsible in our organization for the following technical research, which is divided between:

(*a*) paper and board
(*b*) packaging, and
(*c*) other products

economics and statistical applications, including market research, group engineering, patents, work study, major projects.

Each operating division has its own development department, the head of which is responsible to the director of research.

Programs are agreed both centrally and in the divisions at meetings held under the chairmanship of the director of research. These meetings are attended by the divisional directors and their respective research department heads. We find this a convenient and effective way of allocating programs between central research and divisional research departments.

### Industrial Relations

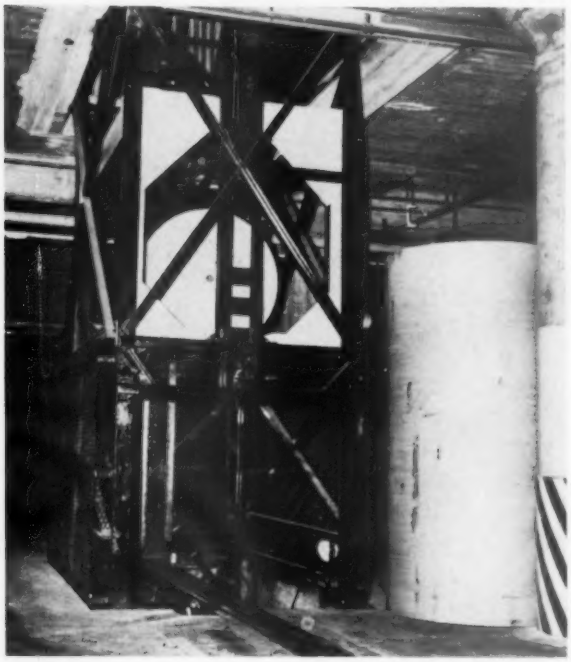
It is unfortunate that industrial relations over a wide field are still conditioned by a few traditional but outmoded attitudes of both the employer and the employe.

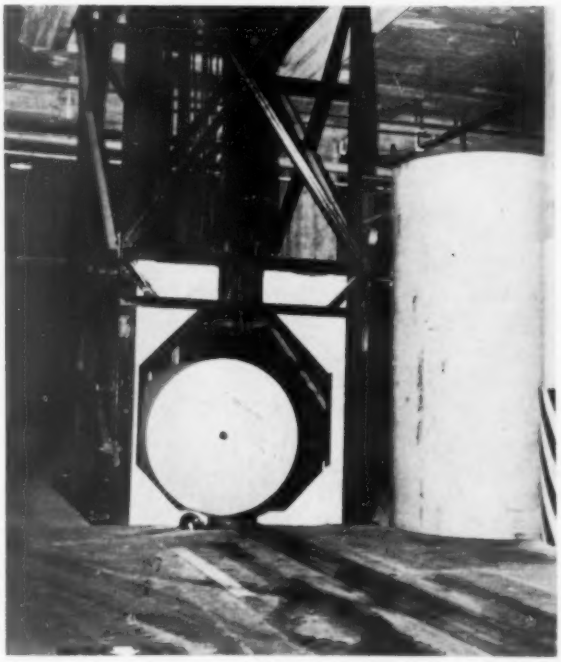
Although in the modern age these attitudes are completely out of date, we still hear employers talking as though they were waging unremitting warfare against their employes, and equally often one detects the reciprocal attitude especially in some of the trade union representatives in the factories. It is extremely important that in our approach to this problem we ignore these attitudes or, where this is not entirely possible, we deal with them with patience and understanding and with a determination that the right relationship cannot be established unless emotionalism is absent from any decisions.

We find that the most important single factor in establishing good relations is by concentrating on our communications in all areas with the idea of projecting as far down the line as possible the maximum degree of management thinking which it is possible to transmit.

Finally, I want to express my deep belief that modern management is a great and serious responsibility involving much more than making the maximum amount of money in the minimum of time—indeed, the Inland Revenue have taken pains to see that this is no longer possible—but, now and in the future it is a career calling for the highest training and the utmost dedication and, granted this, it will provide a personal fulfilment as complete as any of the arts, sciences or any other calling or profession. ■

## Problem: Shortcutting number of roll handling operations





Place: St. Regis Paper Co's. Jacksonville, Fla. mill

Solution: A slat conveyor is mounted flush with the floor and on the bottom of a roll lowerator. Rolls are brought from the operating floor of the machine room and are lowered onto the waiting slat conveyor.

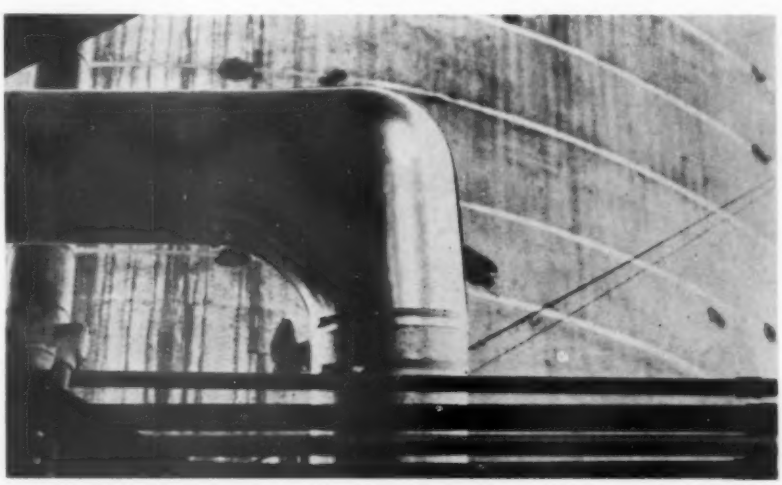
Installation of this system has eliminated need for a roll handling truck to pick up rolls as they are discharged from the lowerator.

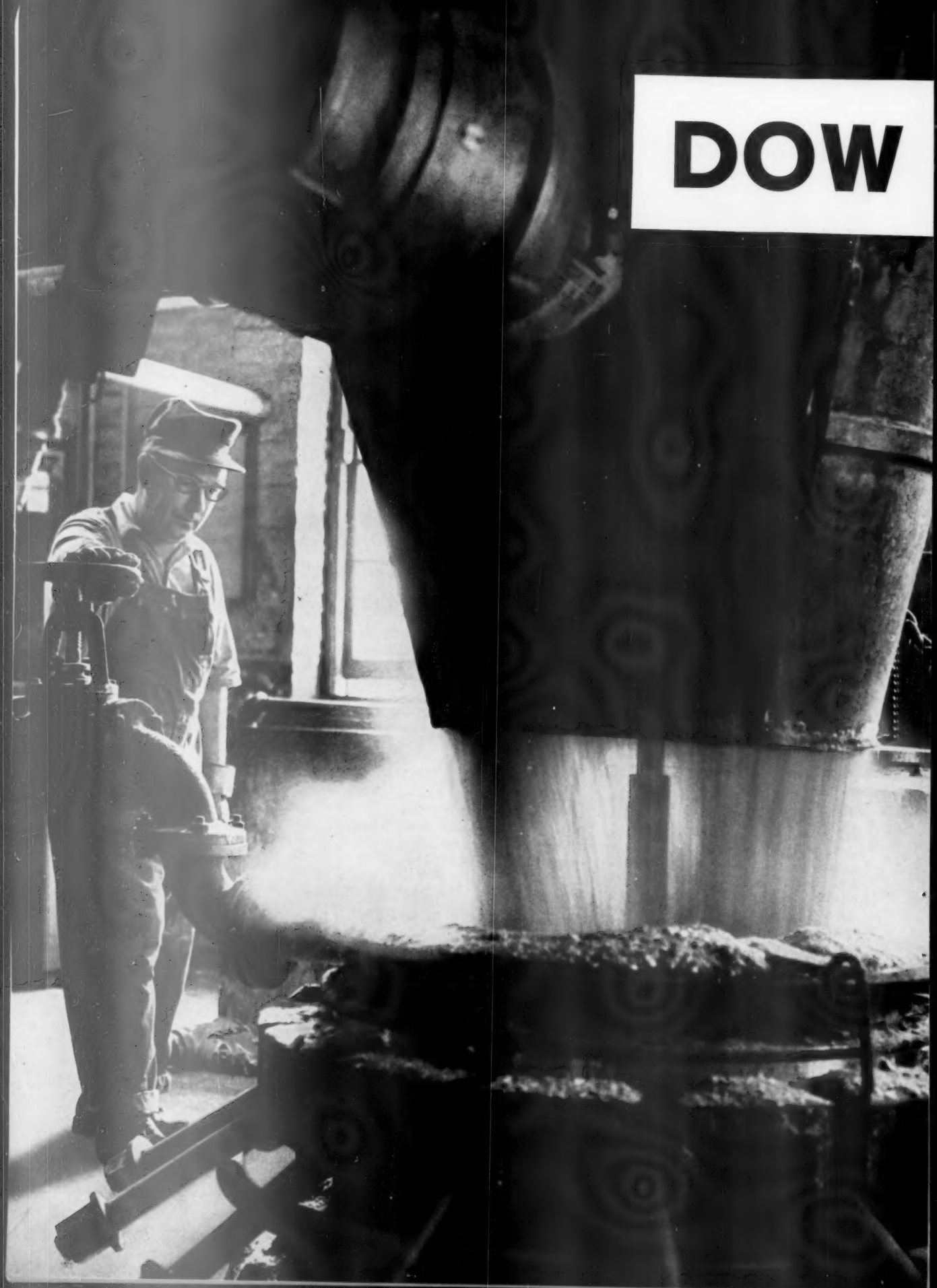
## Problem: Preventing "ell joint cracking" on insulating piping

Solution: An aluminum jacked called a Humped Elbow. Hump is located at vertex at the bend, permits covering of 109 combinations of pipe sizes and insulation thicknesses from a selection of only 13 manufactured sizes. The 13 sizes of the two-piece humped elbow-covers fit any ell from 3 in. o.d. through 12.81 in. o.d., either long or short radius ells. These preformed elbows fit screwed or socket welded fittings and may be attached by metal bands, screws or POP rivets.

The two-piece jacket halves can be installed in less than 5 minutes and can be easily detached for inspection. Design is such that it has a good overlap onto the adjacent pipe insulation, important when used over preformed insulation ells or when used over field built ell insulation because adjacent pipe insulation is lapped by the metal elbow cover, protecting against exposure damage at this point. Other special features: No cutting away of insulation material to fit the elbow; Humped Elbows eliminate cements, mastics, canvas and painting, are virtually immune to weather or mechanical abuse.

Supplier: General Aluminum Supply Corp., 1506 Eastern Ave., Kansas City 26, Mo.




DOW

## pulp processing chemicals

# MAGNESIUM HYDROXIDE SLURRY

## MAGNEFITE PULPING GIVES HIGHER STRENGTH AND YIELDS, SHORTER COOKS, THROUGH A WIDER RANGE OF WOODS

A significant improvement over earlier magnesium-base pulping process, the Magnefite process permits a greater range of wood species to be pulped . . . in shorter cooking cycles . . . producing excellent pulp at higher strength and brightness with better yields. Magnefite pulping may be combined with a highly efficient commercially proven heat and chemical recovery process.

*The Magnefite process* has been successfully applied to a wide variety of woods—jack pine, tamarack, white pine, birch, elm, poplar, maple, and other difficult-to-process woods—permitting a lower cost/ton of pulp produced.

*Processing advantages are numerous.* Cooking cycles are shorter since there is no limit to the speed at which the temperature of the digester can be raised. The absence of large quantities of $SO_2$ gas in the digester permits cooking at higher temperatures. A rapid increase in temperature is also possible as a result of impregnating pulpwood chips with hot magnesium bisulfite liquor of equal combined and free $SO_2$. With such rapid penetration of chips, cooking time is reduced as much as 40%! This results in a substantial increase in digester capacity. The absence of true free $SO_2$ simplifies liquor make-up, eliminates the need for pressure storage vessels, and practically does away with dry relief.

In some cases, the cost and processing advantages of Magnefite pulping justify its use even without chemical recovery. Where chemical recovery is justified, 90 percent of the pulping chemicals may be reclaimed and reconstituted in a recovery system.

Dow is a basic supplier of the principal ingredient, magnesium hydroxide . . . in slurry form for maximum handling ease . . . available for immediate delivery. Chances are Magnefite pulping can be an advantage in your processing operation. Write THE DOW CHEMICAL COMPANY, Midland, Michigan, Chemicals Sales Department 802JJ7-10, for further details.

**THIRTEEN LOCATIONS COUNTRY-WIDE ASSURE PROMPT DELIVERY OF DOW CAUSTIC SODA**

To serve you better, Dow Caustic Soda Solution 50% is available when, where, and how you want it from thirteen shipping points throughout the country. Fast delivery is assured via tank car and tank truck from four producing plants—Midland, Mich.; Freeport, Texas; Plaquemine, La.; and Pittsburg, Calif.; plus nine terminals—N. Charleston, S. C.; Carteret and Bayonne, N. J.; Denver, Colo.; Grants, N. Mex.; Chicago, Ill.; Los Angeles, Calif.; St. Louis, Mo., and Baltimore, Md. All provide tank truck and tank car shipments. For more information, call your nearest Dow Sales Office or write THE DOW CHEMICAL COMPANY, Midland, Michigan.

**THE DOW CHEMICAL COMPANY** DOW Midland, Michigan

ANHEUSER-BUSCH, INC.

ANHEUSER-BUSCH, INC.

Sign of highest quality

• STARCHES

• DEXTRINES

• GUMS

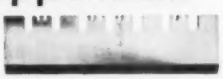
For all phases of paper manufacturing and converting... beaters, tub sizing, coatings, calendering, corrugating and laminating.

*all fine products...*

from the corn we took off the cob

ANHEUSER-BUSCH, INC.
Bulk Corn Products Division
St. Louis, Missouri

**Uniform Chips with longer lasting Heppenstall chipper knives**



Heppenstall has the exact knives for your chipper. Exact because they give you uniform chips, cord after cord—help you keep cooking time consistent for every batch. Exact because Heppenstall chipper knives last longer, keep costly down time to a minimum.

For more specific information, contact your Heppenstall representative or write us direct.

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PITTSBURGH 1, PA.
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**MIDVALE-HEPPENSTALL COMPANY**
NICETOWN, PHILADELPHIA 40, PA.

# POWELL VALVES HELP MAINTAIN PRODUCT UNIFORMITY AND PROFIT

You can count on Powell Valves to overcome flow control problems where corrosion, erosion, heat or wear materially contribute to the maintenance of quality control. Performance reports prove this—year after year, in pulp and paper plants across the country.

Also, since Powell offers you an unusually wide selection of valves in stainless, nickel, Monel Metal*, Hastelloy# and Ni-resist*, your need is met easier, faster and at less cost.

On the job, you'll find Powell's good design and workmanship result in minimum maintenance that means lower operating costs too. For more information and assistance, contact your nearby Powell distributor, or write us direct.

*Registered trade name of The International Nickel Company.
#Registered trade name of Haynes Stellite Company.

150-pound Stainless Steel "Y" Valve. Outside screw rising stem and yoke. Bolted flanged bonnet. Integral seat. Available only with flanged ends. Fig. 1944 in sizes 4" through 8". End flange and face to face dimensions conform to MSS SP-42 Standard.

150-pound Stainless Steel O.S. & Y. Gate Valve Fig. 2453DG, with split wedge, in sizes 2½" through 8". Also available as Fig. 2453SG with interchangeable solid wedge in sizes 2½" through 18". Two designs, one-piece yoke, 2½" through 4" and separable yoke arms, 5" through 18".

200-pound W.O.G. Swing Check Valve, Fig. 2192. Body and bolted cap are Ni-resist. Valves through 8" have renewable Type 316 stainless steel seat ring, disc and disc holder; discs in 10" and 12" valves are Ni-resist with Type 316 stainless steel facing. Sizes, 2" through 12".

*115th year of manufacturing industrial valves for the free world*

**POWELL** PAPER MILL **VALVES**

THE WM. POWELL COMPANY CINCINNATI 22, OHIO

## LONG-TIME

# ...logs bigger

**Contractor N. N. Meece, Washington, North Carolina,** has logged 20 years with International crawler power. Here his 71-hp TD-9 is shown arch-skidding a load of tree-length pine to the truck landing on the J & W Dismal tract owned by North Carolina Pulp Company. Even from extremely muddy, rough and sandy woods, this TD-9 arch-skids up to 1,000 bf. per load.

**Exclusive International 3-point track suspension provides** free oscillation to give maximum track-to-ground contact for full-time positive traction in rough woods! This sure-footedness helps owner Meece log the equivalent of 125 cords of pulpwood (or 44,000 bf. of saw timber) per 40-hr. week with his turbocharged TD-9.

## INTERNATIONAL® USER

# loads with turbocharged TD-9

**"During our 20 years** of using International crawlers logging sawlogs and pulpwood, we have had long, durable service from these machines, with what we consider top production," reports Supt. F. W. Meece, for logging contractor N. N. Meece, Washington, N. C.

"We find our new direct-start, TD-9 easy to start, fast, and with real logging maneuverability. This tractor, with the increased and turbocharged power of a 6-cylinder engine, and better flotation too, can log much larger loads than our older model TD-9."

### Fast starting—easy operating!

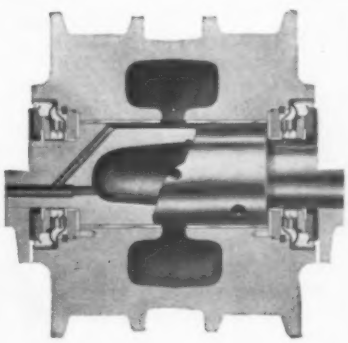
You simply press the TD-9's direct-start button to ready 66 Diesel hp for action. And from low idle to full load, the TD-9 delivers smooth, 6-cylinder power—on fuel precision-metered by the most simple, efficient and compact rotary-type fuel-injection pump built.

For operating ease, the TD-9 has a roomy, thick-padded, foam-rubber, cushioned seat—flush-deck safety—"see all" visibility—modern booster steering. For steady full-load performance, the TD-9 has the heat-defying power-transfer efficiency of a full-ring, sintered metal-faced engine clutch—pressurized cooling system—cool-running, "no-fade" steering clutches.

**Press the direct-start button—**prove **seconds fast and fingertip easy** the smoothness and big capacity of the tough-job-proven, turbocharged 6-cylinder Diesel engine. Measure the plus advantages of 6-foot-long tracks teamed with exclusive International 3-point suspension—for positive, work-anywhere traction. Compare how decisively the TD-9 outproduces and outsaves anything in its power class! Let your International Distributor demonstrate.

### It's NEW!

**Now, new precision-type metal-to-metal** seals are provided on International TD-9 Dura Rollers. Thoroughly proven in thousands of hours of toughest mud and water operating conditions, these new seals give positive protection against leakage of lubricant or entrance of abrasives. Similar to the outstandingly successful seals used on the larger International crawlers, the TD-9's new seals extend track roller lubrication intervals to 1,000 working hours!



*International® Construction Equipment*

International Harvester Co.,
180 North Michigan Ave., Chicago 1, Ill.
A COMPLETE POWER PACKAGE

Case 310 Power-Angling Dozer gives you big blade capacity with on-the-go hydraulic angling . . . for easier decking, faster clearing and trail-building.

# Two ways to STEP-UP PROFIT on small logs and pulpwood . . .

DIGGING • LIFTING
**HANDLE WITH CASE** *Utility*
LOADING • CARRYING

The easiest way to *increase* your profit on tractor-work is to make sure you have the *proper* machines for *your* size of logs, length of season, and type of operation. For example:

**I. If you are now using farm-type tractors,** you can increase your production by stepping up to the extra power of a Case 310 *Utility* crawler — to skid more logs each trip, load more pulpwood each cycle, clear trails and do tree-farm jobs faster. You'll gain extra traction for regular work in mud and snow . . . save wages, and investment in multiple rigs. You'll also reduce downtime and repairs with the 310 crawler's heavier construction.

**II. If you are now using over 50 hp tractors,** you can reduce your investment, cut high ownership expense and excessive "sit-idle" costs with a more maneuverable Case 310 crawler. You'll reduce outlay for fuel, maintenance, and repairs. You'll also save time and money on clearing and trail-building because this "compact" tractor takes less operating space. And the price is so low you can afford 2 or 3 Case 310's for the cost of *just one* oversize rig.

Husky Model 310 gives you 5815-lbs drawbar pull with high load-starting torque. It maneuvers easily in close quarters and soft ground, turns full loads with "pull" on *both* tracks. With *easy-starting Case-built gasoline or diesel engine,* it gives you economical, long-life power for stepped-up production with any of 4 different types of dozer blades, or 3500-lb loader for logs or dirtmoving, or as a drawbar tractor; with optional rear winch, scarifier, or hitch for tree-farm tools.

Call your Case Dealer for free demonstration. See how this low-cost Model 310 can step-up your profit on smaller timber. Or for detailed information write J. I. Case Co., Racine, Wis., Dept G1791. CU-D-279

**12,000-lb hydraulic-controlled winch**

For fast skidding, you can't beat Model 310 with a versatile, finger-touch-operated CARCO winch. You get smooth, positive winching, holding, or free-spooling at any time — "on the fly", or standing still.

**CASE**
J. I. CASE CO., RACINE, WIS.

## Pointing to increases of 300% in delivered wood costs in 20 years, CCA's Jennings tells how to establish a cost-watching program of . . .

# Timber Target-Costs

By DONN O. JENNINGS, Brewton Mill General Manager, Container Corp. of America

OVER THE PAST 20 years wood costs per delivered cord have increased about 300%, wages and salaries 86%, materials other than wood 82%, and freight an average of over 250%. Investments in plant and equipment have been increased greatly to meet quality demands. Since 1950, sales have increased steadily but profits have decreased roughly 10-20%.

Costs, today, are being scrutinized in a manner reminiscent of the 1929-34 period. But cost checks are not enough. Though actual costs depict performance, they cannot be used alone because of changes in sales, production and operating efficiency. Low volume causes high unit costs and increased volume tends to lower unit costs.

**I recommend the old program** of establishing targets and then comparing them each month with actual costs. This plan is one of long standing, is understood by most everyone, and yet is not used successfully in many instances.

One basic reason why many woodland managers do not fully appreciate cost saving or target programs is because timber work in the past was tough. People progressed because they out-produced and put in more hours than others. Supervision was tough. People worked diligently because of fear of failure and loss of job in lieu of being rewarded for work well done.

Because of this, managers even today hesitate to operate too close to the belt, particularly on inventories and size of procurement areas. Until they sell mill management their problems and get those in charge of the mill to factually and realistically share in the responsibility for woodland success or failures, they will continue to hesitate.

Mill management often will gamble the plant operation by limiting spare equipment or parts, by maintaining low inventories of materials other than wood—they will operate a boiler with a tube or tubes blowing but will not share in the low wood inventory problem wholeheartedly.

At our mill, wood managers presented the facts, pointed out the possible hazards of only a 10-15 day inventory, and then a collective decision was made to carry a low inventory even if the plant shut down. This one decision enabled timber people to feel we really meant to allow them the opportunity to target and check overall inventories and costs.

**A good factual presentation** and sound selling of your ideas and a serious request to take a calculated risk in certain areas is your first and vital step to persuade mill management. Mill managers are hard-headed businessmen and need to have such risks merely compared to other plant risks that are taken regularly with even less concern. When you are successful, and only then, can you embark upon a target-cost program with hope of getting everyone to work in earnest.

**Here are timber target-costs** that we use as bench marks:

(1) Check total woodland or timber assets and then double-check percent return on this investment.

(2) Break down investment: (a) Vital and necessary for current operations; (b) Future protection. Analyze the percent return on each without penalizing department for Future (b), which is actually not their decision in most cases. Secure comparative figures if possible on item "a" and set target.

(3) Check wood cost per cord delivered, including freight.

(4) Maintain yield per cord, thus wood cost per ton of mill product.

Items such as quality, freight, inventory and department costs which include salaries, hourly wages, supplies—light and power, stationery, telephone, telegraph, fixed charges, allocated office, employe benefits, repair and maintenance—can be readily noted, supervised and checked.

In CCA we target each of these annually and then check them monthly with explanations called for on items out of target.

**A cost program to succeed** must have these requisites:

(1) Mill—woodland management cooperation, leadership, and support.

(2) Full participation of all in the organization.

(3) Responsibility for achievements down the entire line must be fixed.

(4) A manager capable of training and assisting his organization to understand what is being asked and helping them attain pre-set goals.

(5) Regular reports on accomplishments and targets which must be discussed between management and supervision, supervision with workers, and giving credit where medited, along with ways to cut waste.

**Whatever you do must pay.** If you do not get a better product, more volume, or a reduced cost that can be a definite financial advantage, then do not approve a program.

Also, over a period of time, processes and equipment become available to all, and thus the only real difference is how well we direct the efforts of those who work for us.

In today's market, where the sales manager continually states that competition is under-pricing him—not outselling, where people want more and more for less and less work, where people put security and monetary gain above self-respect, and where more and more volume apparently means merely a slowdown in less profit, costs can serve as a tool and a guidepost as never before. ■

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Excerpts from technical paper presented at APA Southwestern Technical Committee meeting (APA technical paper: 61-P-3).

# What Research Means to a Forester

## From growing more trees on more acres, forestry research now extends to growing better trees to increase yield and quality

By PAUL M. DUNN, Director of Forestry, St. Regis Paper Co.

FORESTRY RESEARCH aims at maximum sustained timber volume and values within practical economic limits on company lands. Both short term and long range goals are involved: including silviculture, regeneration, management and utilization; physiology and soils; research in protection from fire, insects, disease and wildlife damage; and recreation research.

Public agencies and educational institutions are eager to expand their research activities. Undoubtedly considerable expansion will take place; however, they are limited by economics. It is improbable that the increasing financial burden which the needed expansion of forestry research will entail can be carried entirely by an already tax-weary public.

**Wood-using industries must share** the burden of the additional efforts required. Moreover, the industries have a clear-cut responsibility because they are the major, or at least the most immediate, beneficiaries of forestry research.

The job of the industrial forester is to examine and analyze natural and man-made factors involved in managing timber as a crop. Idle land not producing a useful timber crop is of no more value than idle mills. By applying practical solutions to problems in reproduction, protection, and harvesting, the company is developing its tree farms into efficient "wood-producing plants."

Forestry research has been concerned primarily with growing more trees on more acres. A next step will be to grow better trees to increase yield and quality—a long range problem in forest genetics. Another phase is utilization where improved harvesting techniques, improved equipment in harvesting and transportaton, and more efficient use of labor will aid in coping with the ever-increasing costs of the delivered product.

Practical results have come from several major areas of research. Studies in natural reforestation, tree seeding habits and seed germination indicate that planned seed-block patterns have reforested three-fourths of all company lands harvested in the South. An increease is expected.

Experiments in hand-planting and seeding techniques, aerial seeding by helicopter and seedling protection have been carried on to reforest areas where natural seed sources have failed. Continuing growth and yield studies are made to provide information essential for developing sustained-yield programs and predicting future wood supplies for diversified manufacturing.

**Timber stand improvement** by thinning and pruning dense young growth shows considerable promise. In forest soils research, a more thorough knowledge of the relationship of earth to tree growth rate and quality will prove helpful. Since insects and disease destroy more timber annually than fire, scientists are spending more and more time on these problems to reduce losses to a minimum.

In the main, the basic or fundamental studies should be the major responsibility of public agencies, particularly the federal government. However, several states and educational institutions are now equipped to carry on long-term research, and are doing a commendable job. Studies are being made in silviculture, genetics, soils, physiology, site preparation, insects, diseases, wildlife relations and recreation.

One example is related to the silvical nature of the various species: How many trees or seedlings are needed to establish a satisfactory stand under various conditions? Another example is the hardwood types; both as to competition with softwoods, and also as to merit in maintaining certain hardwood species and/or types. Information as to proper utilization of the hardwoods is sorely needed and was a major recommendation of the Task Group on Forest Products made to the President's Commission for Greater Utilization of Agricultural Corps.

**Industrial forestry research will** probably be confined to applied rather than fundamental investigations, for the present. I do not think industry should restrict itself to applied research arbitrarily. The decision as to whether or not a project, which is fundamental in nature, should be undertaken by industrial research workers, should rest on the need for and applicability of expected results by the particular industry, the capabilities of those who propose to do the work, and the facilities at their command.

PAUL M. DUNN

The division of responsibility between industrial and public agencies, for applied and basic research, is essentially a policy of expediency, based on the fact that governmental and educational institutions are in the main better equipped with personnel, facilities and experience needed to conduct the more exacting basic studies.

Applied research fits more closely the immediate needs of industry and therefore can be justified and provided for more readily. Because of this, applied investigations will undoubtedly form the bulk of initial industrial research efforts. Examples are seeding and planting techniques, adaptations of equipment related to fire control, reforestation, wood harvesting and transportation. Harvesting methods are important, as they are associated with manpower and other costs.

**The need for full cooperation** between industry and public agencies needs to be stressed strongly. Much effort and time can be saved with proper coordination and communication. The industry should, as a group and individually, support state and federal programs, when these programs have been analyzed and properly coordinated. Examples are

Extracts from technical paper presented at APA Appalachian Technical Committee meeting (APA technical paper: 61-TP-32).

the several group programs in forest genetics, the Georgia Research Council, and support for federal appropriations in research.

The organization of an industrial forestry research effort should depend to a large extent on the scale of the effort. It is highly important that some organization be provided, whether a separate and co-equal branch of the forestry organization or merely the designation of leadership and allowance of time for investigative work.

The importance of organization will be clearly reflected in quality and quantity of research carried on, and in research policies, continuity of work and the like. To thrive and produce, forestry research must be soundly and efficiently organized, and it must be fully integrated and coordinated with other company forestry activities.

Developments in wood utilization indicate increased demand for less desirable species. This means a number of things to a forest manager. He may now be able to remove and sell, or utilize at a profit, a species which heretofore was non-commercial. It would also indicate that careful analysis is desirable before spending large sums on cultural measures to favor one species. Just as the differential between values of trees of high and low quality is narrowing as a result of products technology, so too the differential between the values of various species is becoming less.

A major cost factor affecting return is harvesting of timber and these costs must be kept to a minimum. There is a continuing effort being made to reduce logging costs by the introduction of improved equipment and by modification of existing logging methods.

Another factor of major economic importance is the tax structure relating to land and timber. An unfavorable tax situation produces constant pressure to shorten rotations and liquidate timber values, particularly high quality stumpage. If timber is mature or over-mature, the losses attributable to decadence, coupled with the high tax rate, certainly indicate early liquidation of the values involved.

**To achieve highest net return** the objectives of the following key company men must be blended: the forester, through management and research, producing the greatest yield within economic limits; the logger, operating at lowest cost; the mill operator, converting logs into marketable products with the greatest value increase and the least waste; and the wood chemist and technologist, constantly finding new ways to utilize and convert the tree into usable products.

Key to the success of this program is the close teamwork between personnel in the various fields of activity. This cooperative attack by several skills on common problems facilitates the unlocking of nature's hidden secrets.

Research studies must be closely coordinated with the operating forestry activities. Research and tree farm personnel often pool their efforts on special problems. By keeping the practicing foresters well informed on new techniques developed through research and project field testing, the use of research results is rapidly accomplished. Only by such practical use of research findings can forestry research continue its full potential in "keeping the wood basket filled." ■

## Long-distance pulpwood trucker avoids penalties of overloaded highway trucks and expensive "underloads" by using . . .

# Pulpwood Truck Scales

LOAD RESTRICTIONS on state highways pose a problem to truckers in the pulpwood industry. Pulpwood weights vary considerably depending on species, moisture content, size and season. One long distance pulpwood trucker, Gene Howes of Kaleva, Mich., has found it pays to use a set of truck scales at the woods loading end of his across-the-state operation.

Trucks are weighed at the logging area in the woods, just before starting the long haul to a pulp and paper mill. Truck loaders become surprisingly accurate in loading with the scales and soon have to adjust only when moving to a new logging area. Mr. Howes reports excellent success with his scales, says his trucks are seldom stopped by the highway department "weighmaster" as a few test weighings have proven they are accurately loaded.

Another important feature is that his trucks are not often "underloaded," an expensive waste of long distance payloads, when loaders are able to determine within a few pounds of the legal load limit. Many trucks not equipped with the scales or as a result of overload violations, frequently underload to be on the safe side.

The American Pulpwood Assn. describes this system in its Technical Release No. 61-R-18. The association says that for companies or producers having a fleet of pulpwood trucks in operation the purchase of a set of truck scales might well be justified in savings effected by hauling maximum allowable payloads or avoiding overload penalties.

Truck scales are made by Loadometer Corp., 1503 W. 41 St., Baltimore 11, Md. ■

ACCURATE LOADING is insured with use of this Loadometer truck scale.

# bought first AMERICAN in 1940 ...now own seven

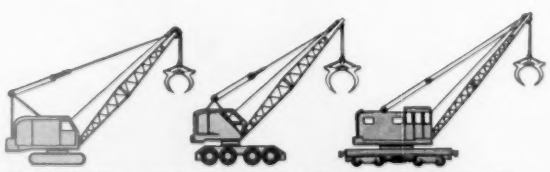
Consolidated Water Power & Paper Co. (Wisconsin) has confirmed what they think of AMERICAN cranes in the most convincing way we know . . . with *repeat purchases* in 1947, 1952, 1955, 1957, and 1959. All seven of the AMERICAN cranes they have bought are in use today, including the first, which has been in steady operation for 21 years.

Shown above is one of their AMERICANS — a 40-ton locomotive crane working at their Appleton yard. Handling 8-ft. pulpwood, it is capable of unloading 15 cars (300 cords) in an 8-hour shift. The other 6 AMERICANS — four locomotive cranes and two crawler cranes — are at work in various other locations.

This record of dependable AMERICAN performance is being repeated in mill yards throughout the U. S. and Canada. AMERICAN stands ready to give you helpful and unbiased recommendations for lowering *your* pulpwood handling costs. Why do we say unbiased? Because we build *all* basic crane types — crawler, rubber-mounted, locomotive, and special-purpose — one suited exactly to your needs. Call in your AMERICAN representative *today*. L-605

AMERICAN

AMERICAN HOIST and DERRICK COMPANY
ST. PAUL 7, MINNESOTA



CRAWLER SELF-PROPELLED LOCOMOTIVE

## USFS anticipates 100 million visitors

WASHINGTON, D.C.—Recreation visits to the more than 186 million acres of the national forests are increasing about 12% each year. Visits last year totaled 92.5 million. The U.S. Forest Service expects more than 100 million this year.

Stressing that all Americans are welcome to use and enjoy the public forests, Secretary of Agriculture Orville L. Freeman also asks their help in protecting forest lands from fire and lowering the cost of administering and maintaining recreation areas.

To further attract visitors to the 14.5 million wilderness acres in the national forests, the Forest Service has published a booklet, Wilderness, and has produced a sound film in color, The Wilderness Trail.

Because there was a shortage of snow in some parts of the West, the Forest Service anticipates a bad fire season. A snow shortage, it explains, results in dry ground and a low water level. As part of this season's fire plans, the USFS is setting up a seasonal office at Salt Lake City, Utah, to keep men and equipment flowing quickly and easily from one part of the country to another. ■

## Thinning 55 year olds ups lodgepole yield

PORTLAND, ORE.—Although lodgepole pine is now a recognized pulpwood species, it was generally considered non-merchantable until but a few years ago. Consequently only limited management research has been carried out concerning this species. A report on lodgepole pine thinning operations, written by James W. Barrett, has recently been published by Pacific Northwest Forest & Range Experiment Station, Portland, Ore.

According to this report: An unmanaged stand of lodgepole pine in central Oregon responded exceptionally well to a first thinning at the comparatively late age of 55 years. Diameter growth was stimulated markedly, mortality was reduced, and stems grew more rapidly into merchantable size classes. Thinning to a spacing of 12 by 12 ft. at age 55 produced higher yields and merchantable volumes at age 77 than thinning to a spacing of 16 by 16 feet. During this 22 yr. period, understory vegetation has changed from a sparse condition to a plentiful supply of grasses.

The report, Research Note No. 206, is "Response of 55-year-old Lodgepole Pine to Thinning." ■

# Rader System Adapts Chip Movement to Plant Layout

Ability of Rader pneumatic conveying systems to move chips from any point in a plant area to any other point, regardless of layout or intervening obstacles, is well illustrated by the setup at Howard Smith Paper Mill Ltd.'s plant at Cornwall, Ontario.

The chip storage pile is approximately 1900 feet from the pulp mill digesters and is separated from the plant by a large parking area and some of the mill buildings themselves.

The Rader blowers and conveyor pipes easily carry the chips the full 1900 feet, rising into the air at the mill approaches to clear driveways and intersecting streets. Capacity of this long line is 126 tons of chips per hour.

The long line is complemented by a second Rader pneumatic system which carries chips from the woodroom to outdoor storage.

In this photo, the log piles are in the foreground, with the woodroom, chip storage piles, parking area and mill in the background. The "long line" conveyor pipe is clearly seen running from the woodroom to the mill, to the right of the storage pile and parking area.

Rader can furnish the engineering know-how and equipment to provide any desired pattern of chip movement in wood products and pulp plants.

Write to Rader for information on pneumatic handling of chips.

**RADER PNEUMATICS**

**1739 N.E. 42nd Avenue, Portland, Oregon**

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continued from page 33

# Johnston is Standard Paper's exec. v. p.

RICHMOND, VA.—Standard Paper Mfg. Co. has announced promotion of George S. Johnston, Jr., from vice president to executive vice president, and election of Mr. Johnston and Joseph E. Hoffman, vice president and sales manager, to board of directors.

Mr. Johnston joined the company early this year as vice president and assistant to the president, Howard S. Donald. Before coming to Standard, Mr. Johnston was a member of the management staff in New York of W. R. Grace & Co., Latin American Paper Division, assigned to company operations in Cuba, Puerto Rico, Mexico and Colombia. He served for a time as resident plant manager in Havana. From 1952 to 1959, Mr. Johnston was with the Continental Can Co. where he was first plant manager, paper container division, and later manager of bleached board development. Earlier he served in management capacities with Champion Paper and Fibre Co. He is a graduate of Princeton University.

Mr. Hoffman came to Standard in 1938. He was in charge of sales in the New York area for the past 14 years. On May 1, he became vice president and general sales manager. ■

JOHNSTON

# Meyer heads Wisconsin industry group

WISCONSIN RAPIDS—Dan Meyer, public relations manager, Consolidated Water Power & Paper Co., has been elected chairman of the important steering committee for the next two years for the Wisconsin Paper Industry Information Service. For ten years, this Information Service, with both top management and public relations men active in its work, has achieved an outstanding success in creating a favorable public "image" of the industry in Wisconsin communities.

Serving on the steering committee with Mr. Meyer will be Tom Jones, Beloit Iron Works (two years); Bob Murwin, Badger Paper Mills (holdover member), and Al Pepper, Flambeau Paper Co. (serving out remainder of term of Gil Schreiber, now in sales dept., Wausau Paper Mills).

The steering committee decided to continue the "Workshops" where paper companies exchange ideas on community and industrial relations—the first one for the next season to be Oct. 19 at Green Bay on "Internal Communications," emphasizing "how to tell the profit story." Others will be on "External Communications" and will include a discussion of automation and its significance.

Sam Casey, executive vice president, Nekoosa-Edwards Paper Co., is general chairman of the Information Service. D. J. Dughie, Scott mills' manager in Wisconsin, and John Reeve, vice pres., Appleton Coated Paper Co., are vice chairmen of the Information Service and Don Lichty, treasurer of Nekoosa-Edwards, is treasurer. ■

MEYER

# McGinnis succeeds Holt at Hoquiam

HOQUIAM, WASH.—George A. Holt resigned his position as resident manager of Rayonier's Grays Harbor division here because of ill health, but will continue his long association with the company as an active consultant. George E. Scofield, general manager of cellulose operations, New York, announced that Lowell M. McGinnis would be resident manager, replacing Mr. Holt. Mr. McGinnis' office of assistant resident manager of the large Harbor operation has been filled by Joseph A. Krauth, who was resident engineer. His post was taken over by Lester R. Reekers, former assistant resident engineer.

Mr. Holt has been with Rayonier and its predecessor company since 1927 when he joined a predecessor firm as chemist upon graduation from the University of Washington. Mr. McGinnis first saw service with Rayonier in 1940 as a chemist at the Shelton, Wash., operation. He is a Washington State College graduate. ■

McGINNIS KRAUTH HOLT

# Ray Jones joins E. B. Eddy as v. p.

HULL, QUE.—W. C. R. (Ray) Jones, who resigned recently as a vice pres., MacMillan, Bloedel & Powell River, Ltd., has joined the E. B. Eddy Co. at Hull, Que., as vice pres., manufacturing.

Mr. Jones, born in Indiana, went to Canada to join Canadian International Paper Co. at Gatineau and after

JONES

spending some time in the industry in Australia returned to Canada to become assistant mgr., Howard Smith Paper Mills at Beauharnois. In 1950 he went to Prince Rupert as mgr., Columbia Cellulose Co., moving to Vancouver to become vice pres., public and industrial relations, Powell River, five years later. ■

# Savage heads West Michigan

SAVAGE

KALAMAZOO, MICH.—Russell H. Savage, retired Mead Corp. vice president, is the new head of the department of paper technology at Western Michigan University, succeeding Dr. Albert Nadelman, who retired to carry on private consultant work and other activities, and the acting department head, Dr. John R. Fanselow.

Mr. Savage is a native of Greenwood, Mass., educated at Massachusetts Institute of Technology, and was with The Mead Corp. from 1922 until the present time. During that period he moved from the position of control chemist to vice president of research, holding the latter title since 1947. During his last year he was also director of long-range planning. Research at Mead under Savage grew from a department of 29 to 170; new laboratories were opened in 1953. ■

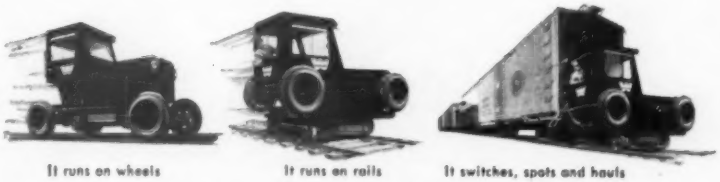

## IN THE PULP AND PAPER INDUSTRY...

### The lesson in this photo can save your company thousands of dollars

What's happening here? A Trackmobile is pushing a loaded tank car—a Trackmobile! Yes sir. A Trackmobile is Whiting's answer to low cost movement of rail cars in and around your plant. This vehicle switches, spots, pushes and pulls rail cars. It has an auxiliary set of road wheels. They are hydraulically lowered quickly so that the Trackmobile can run across tracks to any out-of-the-way spot for the next job. It parks anywhere.

For years, Trackmobile has been saving money for plants in your industry. They'll do your job, too—efficiently and unnoticed—unnoticed, that is, except on your profit and loss statement.

Please challenge us to show proof that a Trackmobile can save you money. Write Whiting Corporation, 15632 Lathrop Ave., Harvey, Illinois. In Canada: Whiting Corporation (Canada) Ltd., 350 Alexander Street, Welland, Ontario, Canada.



It runs on wheels | It runs on rails | It switches, spots and hauls

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2027 Whiting

# Pulpmen elect Donlan president

SCARBOROUGH, N.Y.—More than 75 members of the New York Pulpmen's Golf Association attended their annual meeting here at Sleepy Hollow Country Club, June 13-14. Frank X. Donlan, vice president, Perkins-Goodwin Co., New York was elected president for 1960-61. He succeeds David Brittain, executive vice president, Mead Pulp Sales, Inc.

Michael A. Brown, vice president-sales, Rayonier, Inc., was elected the new vice president. He was succeeded as secretary by Dan J. Pitot, assistant manager, Price & Pierce, Ltd. ■

PRESIDENT'S TROPHY is presented to Francis X. Donlan by David Brittain.

ANDERS TROPHY, for low net on 27 holes is presented by David Brittain, (l) to Tom Salb, Bulkley, Dunton Pulp Co.

PAGEL AWARD, for low net on 18 holes, is presented by Alex J. Pagel (l) Pagel, Horton & Co., Inc., to Doug Shorter, Bowaters Paper Co.

MICHAEL BROWN is new vice president, N.Y. Pulpmen's Assn., and Dan Pitot succeeds him as secretary.

# STRICTLY PERSONAL . . .

## Midwest

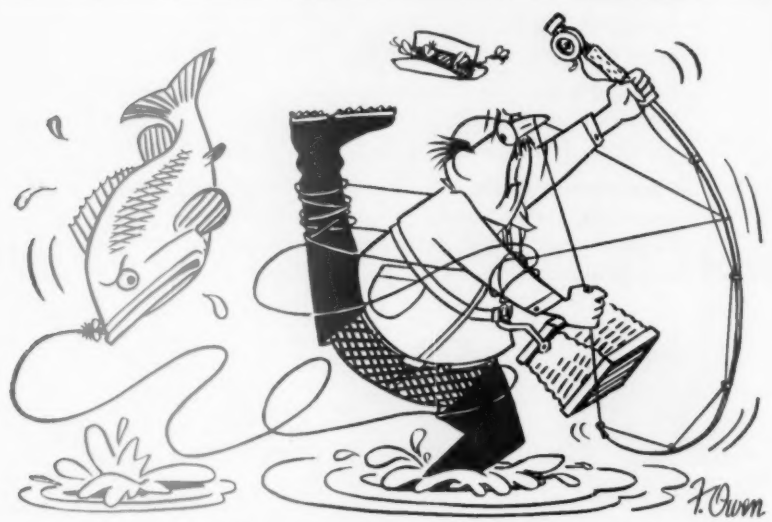
Speakers at recent three-day conference of Kimberly-Clark technical supts. at K-C's R&D Center in Neenah, Wis., included: **G. Kenneth Crowell,** executive vice president; **F. H. Werling,** vice president, creped wadding mfg.; **A. D. Wilkinson,** vice president, pulp and paper mfg.; **J. J. Shipman,** vice president and director of research; **W. D. McGuire,** manager, long range planning; **J. A. Hoffman,** manager, quality systems and measurements; **L. W. Zabel,** supt., instrumentation laboratory, and **R. M. Billings,** administrative assistant.

**James P. Friel,** director of traffic and transportation of Packaging Corp. of America, has retired after 37 years. . . . **William D. Hall,** director of research for the Folding Box Assn. of America, has retired from the post he held for 10 years. Before joining FPBAA he held executive positions in the printing industry.

**G. A. "Jerry" Jackson** is now director of a newly created administrative services department at Champion Paper, Hamilton, Ohio. He was formerly director of materials. . . . **Carlisle Knowlton** has been appointed traffic manager, and **R. E. Lane** has been named purchasing mgr., replacing **Robert Kosar,** acting mgr. Mr. Kosar becomes mgr. of materials management and planning.

**Howard E. Whitaker,** The Mead Corp. chairman, was presented an honorary doctor of laws degree from Miami University of Ohio for his part as chairman of an industry committee and foundation which helps support a paper technology program at the school.

**Francis L. Shackelford Jr.** has been appointed manager of the Chicago district sales office of Du Ponts dyes & chemicals div. He became asst. mgr. of the Chicago district last year, having served as sales mgr. of the dyes & chemicals division since 1954. . . . **Joseph M. Duncan** has been promoted to mgr. of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Becco Chemical Division

Becco engineers are specialists in Hydrogen Peroxide...and in the best ways of handling it. Let us put our fourfold service—offering survey, proposal, installation and inspection—to work for you now. It's your assurance of savings, safety and convenience.

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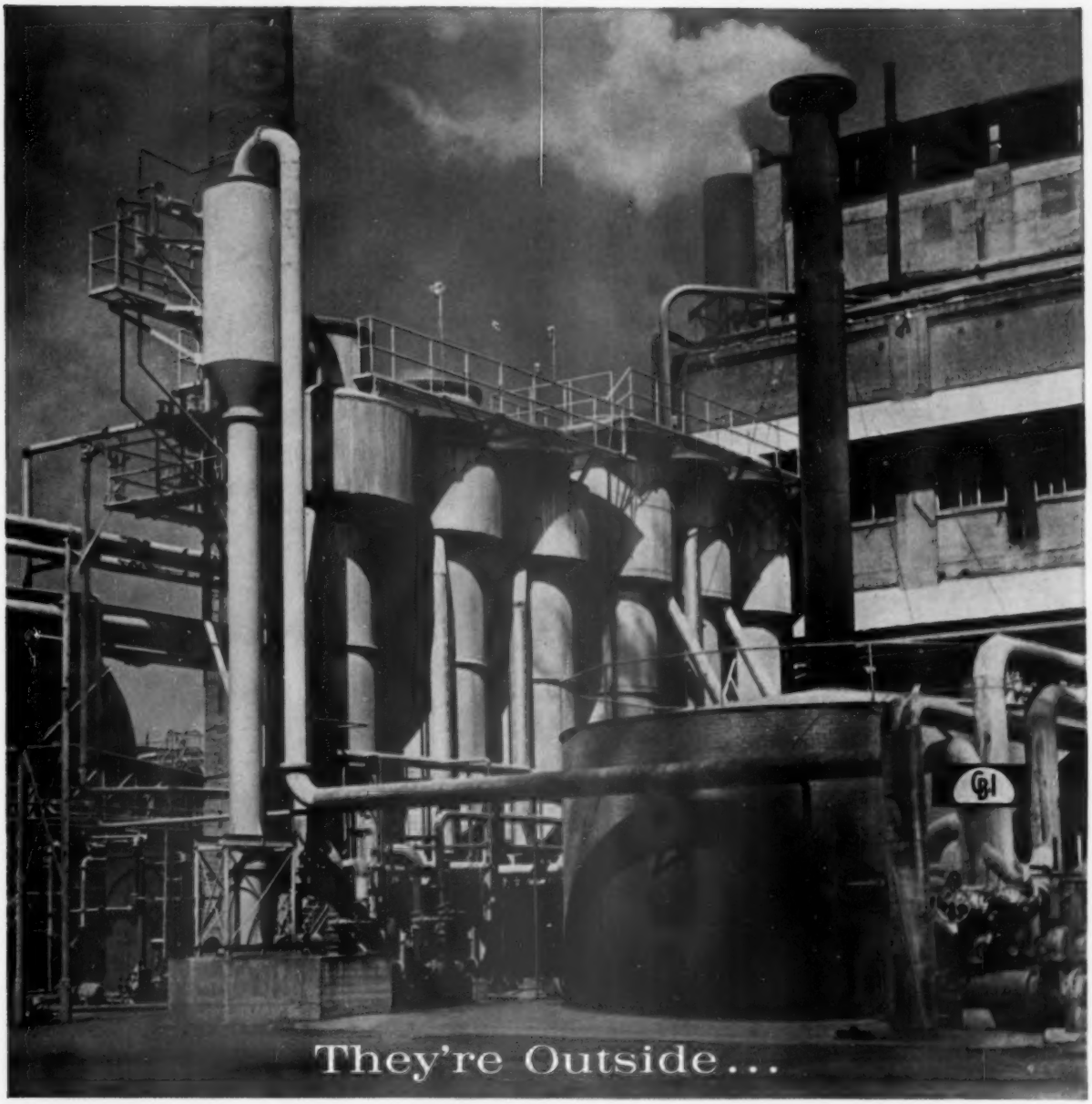


CB-6110

# Require Minimum Space...
# Need No External Support...

Installation of CB&I's sextuple effect evaporator at International Paper Company's Georgetown, South Carolina, mill resulted in the following performance:

More than 99.9% of the chemicals processed by this evaporator are recovered. Equally important are the operating economies of this highly-efficient evaporator system. Waste heat is collected at a low cost. The CB&I patented integral preheaters reduce steam requirements and improve the evaporation capacity. The patented entrainment separators for recovering process chemicals are most efficient.

Constructed with stainless steel and Hortonclad® stainless in areas subject to corrosion, and embodying CB&I's high standards of fabrication, this evaporator will operate efficiently for years with minimum maintenance costs.

This evaporator is one of many ways CB&I works with the pulp and paper industry in improving efficiency and increasing production. Chicago Bridge & Iron Company, 332 South Michigan Ave., Chicago 4, Illinois. Offices and subsidiaries throughout the world.

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HEAVY-DUTY
PIPE
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give faster, straighter cuts

Five Sizes
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Pick up a RIDGID Heavy-Duty Pipe Cutter, and you'll instantly know why it makes pipe and conduit cutting far easier. Perfectly balanced . . . gives you a feel of confidence no other cutter can match. See the extra-long shank that protects handle threads . . . assures easy pressure application. Feel the large, smooth handle that gives you a comfortable, powerful grip. Try it, and you'll find a built-in cushion to keep the cutter wheel "on track" through hard or uneven spots. Rugged frame, guaranteed not to break or warp, stays straight for clean cuts every time.

You'll Want a RIDGID 4-Wheel Pipe Cutter for Work in Tight Places!

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The Ridge Tool Company, Elyria, Ohio, U.S.A.


## Strictly Personal . . .

Allis-Chalmers Mfg. Co.'s north central division. He had been asst. gen. mgr. of the company's Washington, D.C. office since May 1960.

**George W. Mead II** has been appointed quality mgr., publication grades, and **Roman A. Schmid,** quality mgr., merchant grades for Consolidated Water, Power & Paper Co., Wisconsin Rapids. Mr. Mead has been enamel papers product coordinator. Mr. Schmid was formerly director of sales service.

**Ely Balgley** is now director of A. E. Staley Mfg. Co.'s. new market research dept. He will provide current and projected information on/markets for new products.

**Douglas E. Turnbull** is now sales rep., The Bauer Bros. Co. for Ohio, Indiana and Michigan. He and **Lee Eberhardt** supervised start up of new 300 tpd NSSC mill in Japan.

**W. M. Ryan** is now executive counsellor in the paper industries division of Cadillac Assoc., Inc. Before joining his present division, he served briefly with the process industries division. Both his sons are in the paper field.

**Carl Smith** has been elected vice president of Wyandotte Chemicals Corp. industrial chemicals and marketing division. He was asst. gen mgr. i/c sales, distribution and marketing research, research, and product development and manufacturing.

**I. Bruce Sanborn** has joined Consolidated as assistant to **G. K. Dickerman,** director of corporate planning and development. He is a ph.d. graduate from the Institute of Paper Chemistry, received his undergraduate degree is chem engineering from Rensselaer Polytechnic Institute and for two years was asst. to the director of research and development, West Virginia Pulp and Paper Co.

**Peter J. Fluge,** advertising, sales promotion and merchandising executive, has joined the paper products division of Owens-Illinois Glass Co. as communications manager. He succeeds **Robert H. Wacke** whose important new assignment will be announced soon.

Fine paper starts in Puget's timber reserves.

# PUGET PULP *

most important ingredient in fine paper

**PUGET SOUND PULP & TIMBER CO.**
BELLINGHAM • WASHINGTON

* A SOFTWOOD, CHLORINE DIOXIDE BLEACHED SULPHITE PULP

# STRICTLY PERSONAL . . .

## South

J. N. Kuzmick has been appointed a vice president and director of Manhattan Rubber Mfg. Co., Neenah, Wis. **R. B. Hazard** has been named a director; **A. A. Campbell**, a vice president; and **A. F. Kuehn, Jr.**, resident mgr. . . . **Dr. James A. Bralley** has been chosen mgr. of the research and development div. of A. E. Staley Mfg. Co., succeeding **Dr. Thomas L. Gresham**, who is leaving the company.

The Virginia Assn. of FFA presented a plaque June 19 to the Seaboard Air Lines Railroad Co. for work in behalf of forestry education. **Robert N. Hoskins**, general forestry agent who has directed the company's program for 17 years, accepted the award.

Pat Brunson, head tubeman in multiwall at Union Bag Co., Savannah, has a right to be proud of his daughter, Glenda. She's this year's "Miss Georgia." Glenda is an Armstrong College student.

William Harry Peele Jr., has joined Halifax Paper Co., Div. of Albemarle Paper Mfg. Co., Roanoke Rapids, N.C. as technical service supervisor. **Robert L. Whiteman, Jr.**, has joined the design engineering department as design engineer. Mr. Peele is a recent graduate of North Carolina State with a degree in pulp and paper technology. Mr. Whiteman, who graduated in civil engineering at Univ. of South Carolina in 1958, spent the last three years on active sea duty with the navy.

**J. M. Boyd** has been named director of purchases and **P. M. Stanley** purchasing agent at Sonoco Products Co., Hartsville, S.C. Mr. Boyd was promoted to purchasing agent in 1953, and Mr. Stanley was made asst. purchasing agent in 1957.

Congratulations are due **James R. (Jimmy) Lientz**, vice pres. i/c production at Union Bag-Camp Paper Corp., Savannah, Ga., who has just been re-elected president of the Savannah United Community Services. . . . Mason-Neilan, div. of Worthington Corp., is expanding its sales coverage in the Southeast and has appointed three new representatives: Systems Service Corp., Charlotte, N.C.; Ward K. Stallings Co., Atlanta, Ga.; Frank A. Thomas Co., Mobile, Ala. The company has closed its district offices in Atlanta and Birmingham. **E. Putnam Head**, Southeast regional manager, continues in that capacity in Atlanta and **L. M. Chester**, formerly district manager in Birmingham, have joined the Ward K. Stallings organization.

THERE'S A RIGHT WAY TO HANDLE $H_2O_2$, TOO!

fmc FOOD MACHINERY AND CHEMICAL CORPORATION — Becco Chemical Division

Why not let Becco suggest the best handling system for your particular needs? With its four-fold engineering service, Becco—most experienced producer of $H_2O_2$—can serve you well. Including survey, proposal, installation and inspection.

161 East 42nd Street, New York City


## East

Fitchburg Paper Co., Fitchburg, Mass. announces new appointments: **Robert R. Humphreys** is now assistant to **Gilbert F. Parks**, vice president of manufacturing; **Joseph A. Strollo** will pilot the company plane; **Robert Cook Larson** has joined new product development. . . . **Stephen Sturgis** has been appointed gen. mgr. of the new grocery and speciality bag div., International Paper Co. He is presently northeast dist. mgr. for the single service division.

**Dr. Hardy L. Shirley**, dean, State University College of Forestry at Syracuse Univ., has announced five faculty promotions: **Dr. William L. Webb** (U. of Minn. and Syracuse) from assoc. prof. to prof. of forest zoology; **Dr. Maurice M. Alexander** (U. of Conn. and Syracuse) from asst. prof. to assoc. prof. of forest zoology; **Dr. Allen F. Horn, Jr.** (Mich. State and Syracuse) from asst. prof. to assoc. prof. of forest management; **Frank W. Lorey**, (Syracuse) from asst. prof. to assoc. prof. of pulp and paper technology; **Dr. Arthur T. Viertel**, (Syracuse) from asst. prof. to assoc. prof. of landscape architecture.

**Robert F. Koch**, formerly asst. mgr., stainless steel sales for Carpenter Steel Co., Reading, Pa., has been promoted to sales service mgr. of Carpenter's Webb Wire Div., North Brunswick, N.J. He was asst. mgr., stainless steel sales before this appointment.

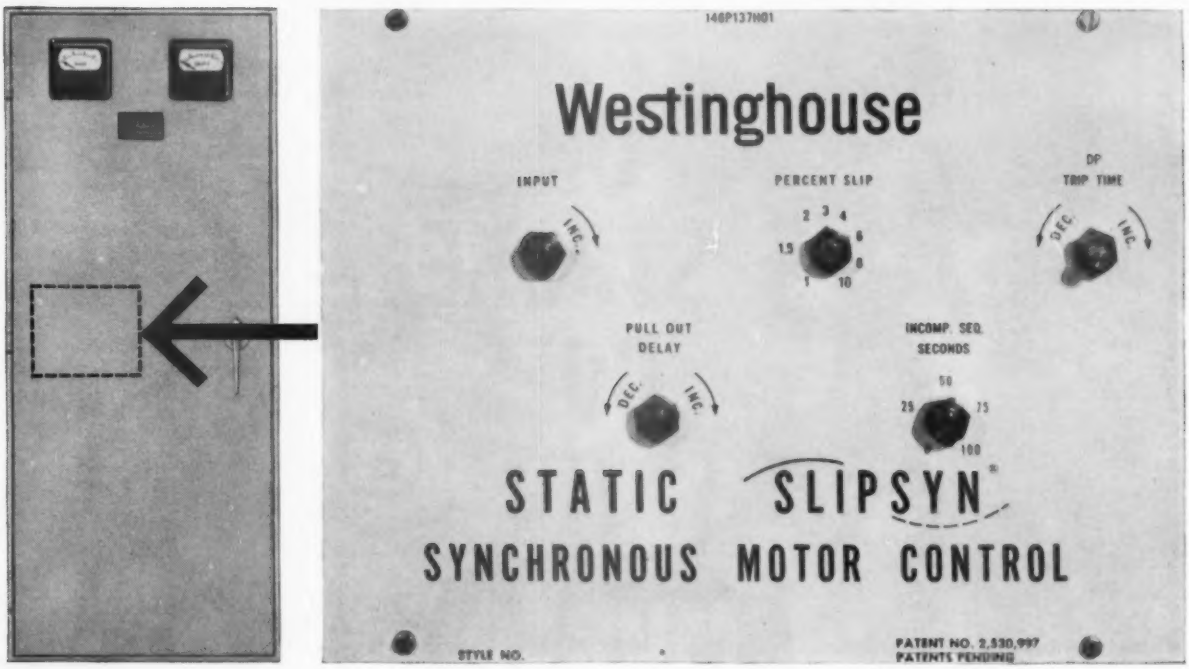
Miss **Ruth Anne Jago**, 61, president of Thwing-Albert Instrument Co., Philadelphia, died May 28 after a brief illness. She had been associated with the company for 43 years, became president in 1957. **Edw. J. Albert**, chairman of the board since 1957, has assumed the duties of the presidency.

**John Apgar** has been promoted to controller, Folding Cart Div., Riegel Paper Corp. His former post was corporate controls co-ordinator. **Dwight Wheeler** was named div. controller at Riegel's Flexible Packaging Div., and **James V. Bennett** moves to Mr. Wheeler's former position of paper div. controller.

**Earle C. Sherman** has been appointed mechanical development mgr. for folding carton operations, Packaging Div., Olin Mathieson Chemical Corp. He joined Olin in 1960. . . . **Valdemar Jacobsen**, Ciba Co., Inc. sales representative, has been transferred from Philadelphia to New England. He joined the company in 1946.

**Dr. Robert N. Hampton** has been appointed manager, marketing research dept., International Paper Co. He suc-

# Now... Westinghouse Static Slipsyn* Control includes 3 more static protective features for synchronous motors




1. **STATIC DAMPER WINDING NETWORK** protects synchronous motors against damage by locked rotor or excessively-long starting conditions. This circuit may be quickly and easily added to your present static units.

2. **STATIC FIELD LOSS NETWORK** protects motors against abnormal conditions resulting from loss of d-c excitation.

3. **STATIC INCOMPLETE SEQUENCE NETWORK** protects the motor in case it fails to sequence properly during start up.

These features, added to the basic Westinghouse exclusive Static Slipsyn control make Static Slipsyn more than ever, the best control available. Its advantages:

**Most accurate synchronization system available**—accuracy up to 99% of synchronous speeds — not affected by machine vibrations.

**Adjustable pull-out protection**—eliminates nuisance tripping due to transient conditions — easily adjusts from the front — can be set to re-synchronize or shutdown on actual pullout.

**No maintenance** — completely static transistorized synchronizing system — uses no moving parts — components are impervious to humid, corrosive or dirty atmospheres — there are no relays to burn, pit, inspect or repair.

**Applicable to all synchronous motor starters**—same sized package for all applications — for both high and low voltage — whether for new motor installation or for relay replacement.

For additional information on the advantages of Static Slipsyn Control for synchronous motors in *all* manufacturing operations, call your local Westinghouse sales engineer or write to: Westinghouse Electric Corporation, General Purpose Control Department, P.O. Box 2025, Buffalo 5, New York.

*You can be sure...if it's* **Westinghouse**

*Trademark

J-25011

# STRICTLY PERSONAL . . .

ceeds Dr. Jack T. Turner, who has resigned to accept post of director of the Business-Education division in the Committee for Economical Development, New York City. Dr. Hampton was previously with Dow Chemical Co.

**Robert W. Andrews**, a vice president of Brown Co. since Feb. 1954, will retire Oct. 17. His most recent assignment has been construction and supervision of the Bermico plant in Birmingham, Ala. . . . Elected to the Controllers Institute of America: **William C. Blanker**, treasurer, Esleeck Mfg. Co., Turner Falls, Mass.; **Irving A. Quimby**, vice president and treasurer, Texon, Inc., South Hadley Falls, Mass.; and **Dwight E. Wheeler**, controller, Special Projects Group, Riegel Paper Corp.

**Donald P. Jones** has joined Southworth Machine Co. as eastern sales mgr. His prior association includes Command Aircraft, Hamilton Standard Div., United Aircraft and H. G. Davis, Inc.

**Robert R. Scherer** is now Mid-Atlantic States sales representative for Appleton Woolen Mills. He was previously with Becco Chemical Div. FMC, and Kimberly-Clark Corp.

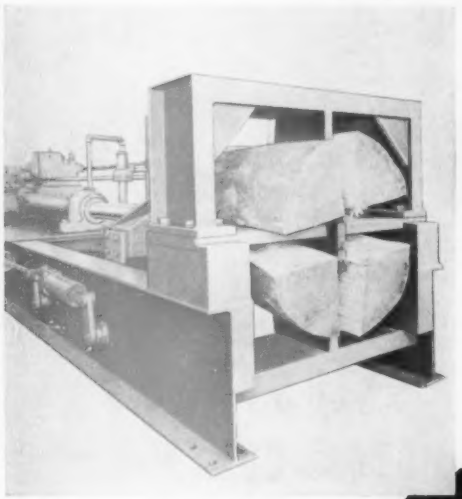
**George J. Muller** has been named by Taylor Fibre Co. as mgr. of its recently expanded Special Projects Group. He was manager of technical service. . . . **George A. Littlefield** is now gen. mgr. of Panelyte Div. of St. Regis Paper Co. He has been on the staff of the vice president i/c operations.

**Cyrus E. Roberson**, 70, for 52 years an employe of Noble & Wood Machine Co., Hoosick Falls, N.Y., died June 18 at his home.

**Fay H. Osborne** has been elected senior vice president, C. H. Dexter & Sons, Inc. **Dr. George D. Knight** takes on duties of acting technical director, continuing as v.p. and plant mgr.

**Britton E. Balzerit** has been named manager, market development, industrial division, Corn Products Sales Co. He was with Interchemical Corp., New York and W. R. Grace & Co.

**H. A. Samuelson**, Consolidated Water Power & Paper Co., Wisconsin Rapids, Wis., was appointed chairman of the Subcommittee for Surface Strength of Paper of the Graphic Arts Committee of the Coating and Graphic Arts Division of TAPPI. Other appointments to the subcommittee were **A. C. Hamilton**, Oxford Paper Co., Rumford Me., **M. Lovensheimer**, Mead Corp., Chillicothe, Ohio, and **R. C. Hagerman**, Champion Paper & Fibre Co., Pasadena, Texas.

ONE STROKE DOES IT!

MURCO HYDRAULIC WOOD SPLITTER

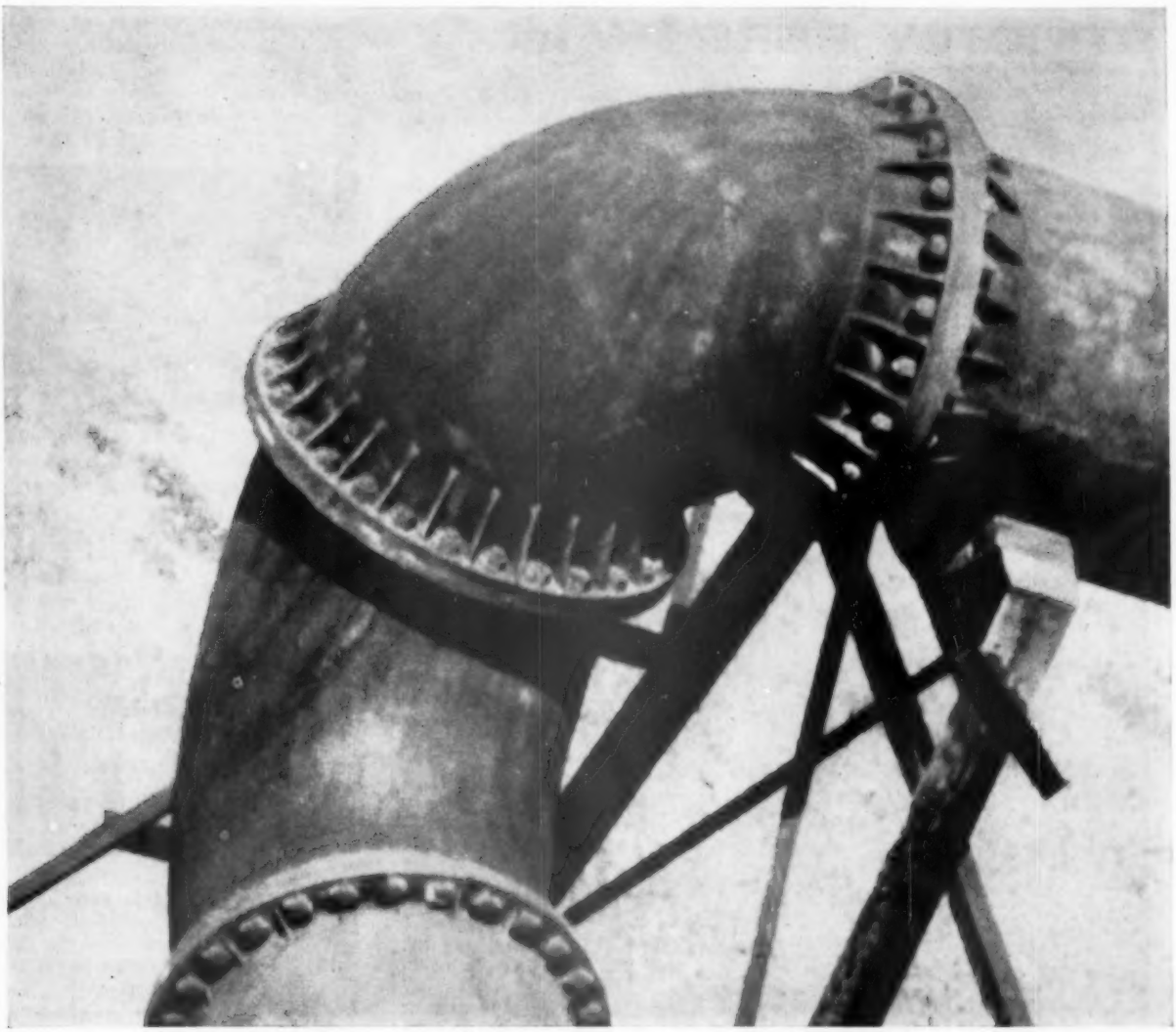
- **For processing logs too large in diameter to be handled by the chipper.**
- **Capacity approximately 1 log per minute.**

The MURCO Hydraulic Wood Splitter does the job so that handling and number of operations are reduced to a minimum. It is equipped with a Star type stationary axe that quarters the wood in one stroke. Its capacity is approximately 1 log per minute (based on the calculation that it takes about thirty seconds to load the machine with the log to be split). Extremely heavy construction, this is equipment designed for heavy duty . . . base is an all-welded design from structural steel . . . axe knives are steel plate flame hardened and strongly reinforced to withstand the impact of splitting . . . cylinder and ram of heavy duty construction Typical installations — Rayonier, Inc., Doctortown, Georgia; Olin Mathieson Chemical Corp., Monroe, Louisiana; Scott Paper Co., Mobile, Alabama; Owens-Illinois, Tomahawk, Wisconsin; Container Corporation of America, Fernandina Beach, Florida; Kansas City Star Co., Park Falls, Wisconsin.

**WRITE**
for proposal and quotations to meet your pulpmill requirements . . . specify maximum diameter and length of wood to be split.

Overall dimensions of MURCO Hydraulic Wood Splitter for 36" diameter wood 5'3" long are 21' long x 5'2" wide, x 5'8½" high.

D. J. MURRAY MANUFACTURING CO.
*Manufacturers Since 1883* WAUSAU, WISCONSIN



# Type HH alloy header elbow handles hot $SO_2$ gas for 15 years

**Delivers seven times the service of previous casting at 1800°F**

Hot, corrosive $SO_2$ gas was eating header sections out of sulfur burners every 2 to 2½ years at a sulfite plant operated by one large paper-making company.

Engineers ordered an elbow section cast of type HH* alloy, containing 11 to 14% nickel and 24 to 28% chromium. That was 15 years ago, and the elbow —still in service today—has delivered more than *seven times* the service of previous castings. As a result, engineers at this company have specified type HH alloy replacement sections for their sulfur burners ever since.

**Advantages of nickel-alloyed castings.** Type HH alloy is one of a family of nickel-containing casting alloys that offers special advantages to the pulp and paper industry. These alloys are easily cast into complex shapes, and are readily available from foundries. By providing superior resistance to high temperatures, corrosion, erosion and caustic and acid environments, these nickel-containing alloys help keep maintenance and parts-replacement costs to a minimum.

**Get helpful information** on these nickel-containing alloys and find out how they can improve efficiency and cut costs in *your* plant. Write for the comprehensive, 72-page booklet, "Heat Resistant Castings, Corrosion Resistant Castings... Their Engineering Properties and Applications." Ask for booklet A-266.

*Alloy Casting Institute designation

**THE INTERNATIONAL NICKEL COMPANY, INC.**
67 Wall Street New York 5, N. Y.

# INCO NICKEL

NICKEL MAKES ALLOYS PERFORM BETTER LONGER

# STRICTLY PERSONAL . . .

## Canada

**Don Bogue** has succeeded **John Langley** as mill engineer, Donnacona Paper Co. Mr. Langley is now asst. mgr., Cornwall division. **A. N. MacKenzie** has been appointed elect. engr.

**Victor G. Baker**, associate director of public relations and advertising, Howard Smith Paper Mills Ltd., has been elected president of the Canadian Public Relations Society—Montreal. Other officers elected include: **Joffre M. Dechene**, Canadian International Paper Co., second vice-president; **George K. Blackburn**, Shawinigan Water and Power Co., secretary.

**Brian W. Power** has resigned as vice pres., the E. B. Eddy Co. at Hull, Que., after 11 years. He has also resigned from Wittington Realty Co. and other Garfield Weston corporations.

**Terry R. Lawson**, training and safety director, Crown Zellerbach Canada, Vancouver, B.C., has been elected president of the B.C. chapter, American Society of Training Directors. . . . **Robert Brown** recently completed 50 years of service with Anglo Newfoundland Development Co., Grand Falls, Nfd., where he is mill mgr. He joined the company in 1911 as a junior electrician at 7½ cents an hour.

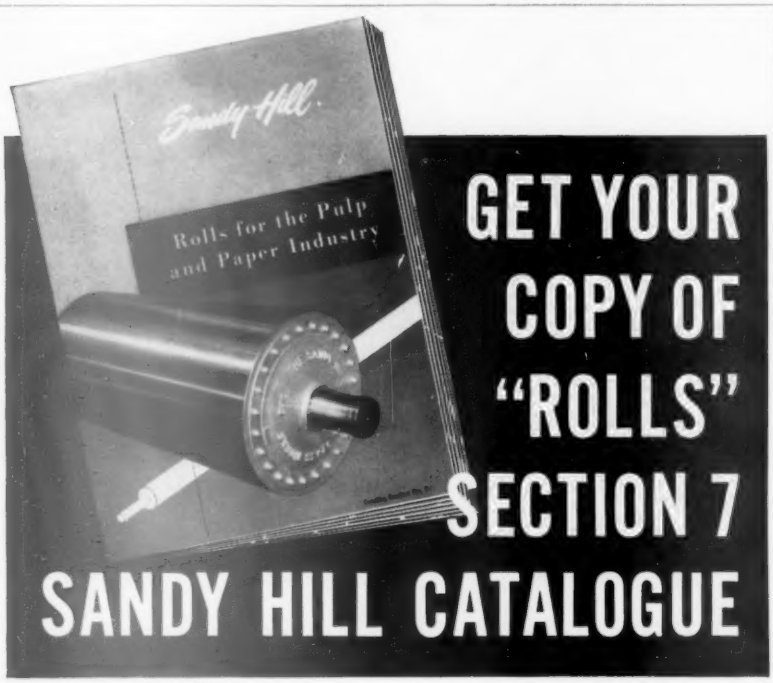
**FIFTY YEARS** is a long period of service in any company and in any industry, but this rare distinction is held by **Robert Brown** (right), mill mgr., Anglo-Newfoundland Development Co., shown here accepting a diamond pin from **C. R. Tittemore**, assistant gen. mgr., in recognition of his long and useful career.

**Jack Sutherland**, sales mgr., Hooker Chemicals, Ltd., North Vancouver, B.C., has been promoted to an executive sales post with Hooker at Tacoma, Wash.

**David F. Kerr** is now vice president, sales, Ontario Paper Co. Ltd. and the Quebec North Shore Paper Co., according to **Arthur A. Schmon**, president and general mgr.

Celebrating the startup of No. 4 machine at Canadian International Paper Co.'s La Tuque, Que., kraft mill are, left to right: **Hon. Jean Lesage**, premier of Quebec; **E. B. Hinman**, recently elected president of CIP, and **A. G. Tafel**, mill mgr. The machine actually went into production last winter, but the ceremony was postponed.

**C. Antoine Geoffrion**, Q.C., of Montreal, has been named to the board of directors, Abitibi Power & Paper Co.,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FOR THE PAPER INDUSTRY SANDY HILL PRODUCES:

Breast Rolls
Table Rolls
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Couch Rolls
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Felt Carrier Rolls
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Dryers
Yankees
Cooling Cylinders
Dryer Felt Rolls
Spring Rolls
Reel Drums
Reel Spools
Miscellaneous Rolls
Also Roll Grinding and Rolls for other industries.

At Sandy Hill every operation in the manufacture of a paper machine roll is in the hands of able and experienced engineers and mechanics. These designers and builders are backed by the company's hundred year history of service to the paper industry.

Each paper machine roll is designed for its particular function in the papermaking process, and manufacturing operations conform to the highest standards to assure rolls of the finest quality.

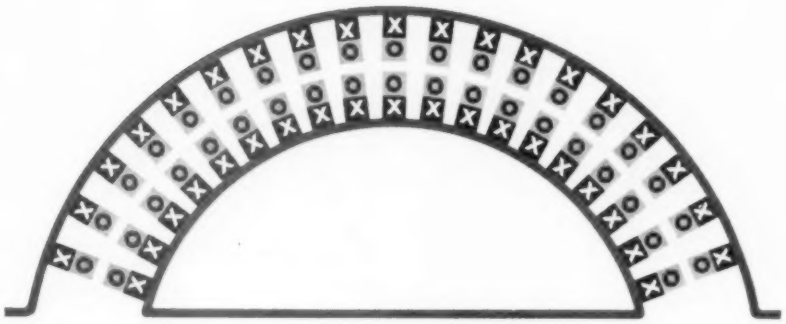
THE SANDY HILL IRON AND BRASS WORKS
HUDSON FALLS, N. Y.

HOUGHTON DEFOAMERS

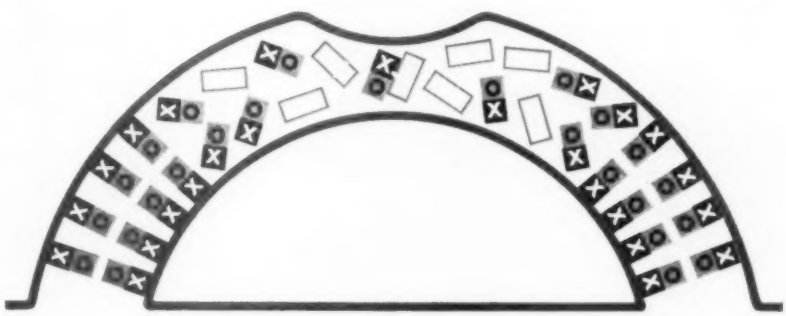
# The make-up and break-up of foam

Foam, of course, is made up of bubbles. But, all bubbles do not form foam. For instance, pure water will not foam. If you take a glass or a beaker of pure water and bubble air through it, the bubbles will be large and will rapidly rise to the surface and burst. Several smaller bubbles may even join together and rise to the surface. But even these burst at the surface. There is no tendency to form foam.

Now, add just one drop of detergent—a surface active material—to this same water, blow air through it and foam develops. The bubbles are relatively small and there is no tendency to coalesce. This foam-causing difference is due to the surface activity of the detergent molecules.



*Bubble Cross-section*



*Bubble with Defoamer Added*

### The Make-Up of Foam

Each surface-active molecule has a "water-loving" end and a "water-hating" end. These molecules arrange themselves in an orderly fashion in the liquid film of the bubble with their "water-hating" ends toward the film surfaces and their "water-loving" ends buried in the liquid interior of the film. It is this arrangement of molecules that gives strength and elasticity to the bubbles and keeps them from bursting.

### The Break-Up of Foam

Anti-foam agents act either by completely displacing the surface film or by modifying its film-forming properties so that it no longer forms a stable foam. Therefore, a good defoamer must be capable of entering the liquid interior of the bubble film and modify or break-up the molecule arrangement that sustains the bubble film. Thus, since the defoamer only has to work on only a small quantity of surface active material, only a relatively small amount of defoamer is needed.

### What Causes Paper Mill Foam?

Some impurity, intentional or otherwise, must be present before foam can be produced. The most persistent foams are produced when the impurity is a surface active material such as carbohydrates, lignin, dyes, black liquor soaps, slimicides, sizes, etc. Since a foam condition can be caused by any one—or several—of these materials, no single defoamer will fill all needs economically. Houghton's "Personalized Paper Mill Service" was instituted to provide this "diagnosis and curative" service with proven De-Airex defoamers. If you have a foam problem in your mill, call your Houghton man or write and request this technical help. It's yours for the asking and may save you untold headaches and expense. E. F. Houghton & Co., 303 W. Lehigh Ave., Philadelphia 33, Pa.

**Houghton**

INDUSTRY'S PARTNER IN PRODUCTION

# STRICTLY PERSONAL . . .

Ltd. He is partner of the legal firm Geoffrion & Prud'homme and is a director of The Royal Trust Co.; L. E. Waterman Pen Co. Ltd.; Melchers Distilleries Ltd. and Merrill Island Mining Corp. Ltd.

Dunton Fisher Harris

New appointments at Dominion Engineering Works, Montreal, include **R. M. Dunton** to new position of manager of engineering, paper division; **J. P. Fisher,** manager of manufacturing, standard products; and **T. E. Harris,** chief engineer of P.M.R. dept., industrial division.

**W. P. Nesbitt,** gen. mgr., fine papers, Howard Smith Paper Mills, is recovering from a coronary attack he had in early May.

## Pacific

Golden Gate TAPPI Section Elects New Officers

Some of the new officers and the guest speakers at the spring dinner of Golden Gate Section of TAPPI, held in Berkeley, Calif., are seen in this picture. Back row, from left: **D. F. Church,** Crown Zellerbach Corp., executive committee; **H. W. Theller,** Crown Zellerbach Corp., outgoing chairman; **Dr. James Clark,** former consultant to the pulp and paper industry and currently professor of chemical engineering at Oregon State College; **W. R. Brandt,** General Dyestuff Co., secretary-treasurer; **P. E. Nethercut,** executive secretary, TAPPI, New York. Front row: **H. L. Rammer,** Fibreboard Paper Products Corp., new chairman, Golden Gate Section; and **R. L. Fife,** Growers Containers Corp., executive committee. Missing when the picture was taken were: **E. R. Padavic,** Container Corp. of America, vice-chairman; and **L. G. Maclise,** Dow Chemical Co., recording secretary. Dr. Clark gave the annual Bob True Memorial Lecture. He spoke on the practical aspects of laboratory techniques for testing paper and board.


**Designers and Fabricators of air moving equipment for the paper industry**

Movement of air is the universal paper mill problem. To produce the right flow that meets the needs of individual mills requires the experience and technical know-how of specialists in the design and fabrication of these systems.

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Serving the paper industry in custom metal fabrication of engineered air systems — machine hoods — Gardner Dryers—Westinghouse Sturdevant fans and steam coils — stock pipe — distributor rolls — suction boxes — white-water pans — head boxes — tanks.

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**Charles A. Rindt,** of USFS regional staff at Portland, Ore., where he was instrumental in developing aerial application of chemical brush control, aerial seeding, seed orchards and genetics work, transfers to USFS Washington, D.C. headquarters in charge of a broad national program dealing with reforestation, cutting practices, timber stand improvement . . . **Henry E. Baldridge,** timber lands mgr. of Publishers' Paper Co. and president of this firm's Neskowin Timber Co., is newly elected president of Associated Oregon Industries, a statewide organization.

**Scott Smith** resigned as pulp mill supt. of Fibreboard Paper Products Corp. San Joaquin pulp & board mill at Antioch, Calif. He joined Georgia-Pacific Paper Co. at Toledo, Ore. as asst. pulp mill superintendent.

**Robert F. Lynch,** supt. of mfg. at St. Regis Paper Co., Tacoma, since early last year, was promoted to production mgr. effective with recent completion of major expansion which about doubled the plant's production capacity.

**E. F. Heacox,** vice pres. of Weyerhaeuser Co., Tacoma, Wash., has been appointed to the 11-member National Agricultural Research Advisory Committee. . . . **Stuart Moir,** widely known in

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# STRICTLY PERSONAL . . .

U.S. and Canadian forestry field, died at his Oswego, Ore., home May 14. He was chief forester of Western Pine Assn. for several years and forest counsel of Western Forestry & Conservation Assn. from 1948 to 1958.

Membership changes in Wash. state regulatory agencies relating to industry: **George C. Starlund**, formerly dir. state dept. of public assistance, becomes dir. of state fisheries dept. replacing **Milo Moore** who resigned; **Wallace W. Bergerson** succeeds **Art Garton** who resigned as dir. of pollution control commission.

**John H. Beaver Sr.** retired July 1 as chief engr. of Western Kraft Corp., Albany, Ore., a mill which he helped lay out. He did consulting engineering work prior to joining this firm and before that was with Crown Zellerbach Central Engineering and Rayonier Inc.

**Waldron Hyatt**, for years gen. mgr. of Hammond Lbr. Co., Samoa, Cal. (now owned and operated as Hammond-Cal. Redwood Co. Div. of Georgia-Pacific Corp.), becomes vice pres. of Pacific Northern Timber Co., Portland, Oregon, which has a sawmill operation at Wrangell, Alaska, and a 3 billion bd. ft. federal timber allotment calling for installation of a pulp mill prior to 1965 to qualify for full timber acquisition. . . .

**G. R. Cranor** is promoted to resident mgr. of Columbia River Paper Co's. Oregon Pulp & Paper Div., at Salem, as successor to **Karl Heinlein**, who retires after 38 yrs. **Hans Brune**, formerly asst. to gen. supt., succeeds Mr. Cranor as gen. superintendent.

## Suppliers

McAndie

Carl

**James L. McAndie** moves to West Acton, Mass. as Northeastern sales engineer, Morden Machines Co. **Allen E. Carl** replaces him as West Coast sales and service engineer in Longview, Wash.

**Charles W. Parker, Jr.**, has been named to the newly created position of gen. marketing mgr., new products department at Allis-Chalmers. Along with the appointment announcement, the recently organized unit was renamed from Special Products to New Products. Parker was director of sales promotion, Industries Group, since June 1958, heading advertising, market analysis and training activities.

**Harley Brotzman** is now sales engineer, compressor division, Fuller Co. He had been asst. sales mgr., for Pennsylvania Pump and Compressor Co., Easton, Pa.

**James P. McNamee** has joined Stowe-Woodward research and development dept. as roll development mgr. Mr. McNamee is a veteran of 23 years experience in the roll covering field.

**Kenneth W. Knorr** has been named sales engineer, southwestern region, Samuel M. Langston Co., Camden, N.J. He was architectural and sales engineer for Kaiser Aluminum and Chemical Sales, Inc., Philadelphia. . . . **George Bazaco** has been appointed field sales mgr., and **O. A. Seglem** field administrator at Fischer & Porter Co., Wilmington, Del. Mr. Bazaco was petroleum industry mgr. Mr. Seglem was mgr. of the Ohio Valley sales region. . . . **Henry C. Schwnek** becomes product planner for Henry Pratt Co., Chicago. He was with GE previously.

**Mount Vernon Mills, Inc.** has purchased the Wm. E. Hooper Papermakers Dryer Felt operations making it new division, the Wm. E. Hooper Sales Co. The new division will handle the distribution of Hooper grey goods and finished goods.

**Kenneth R. Osborn** steps into new post of director of industrial development of Allied Chemical's General Chemical Div. to investigate promising new products and to expedite commercial production.

**Anthony W. Inverso** has been promoted to application engineering, condenser and pump sales dept., Lewis & Gilman, Inc., Philadelphia. He was with the engineering dept.

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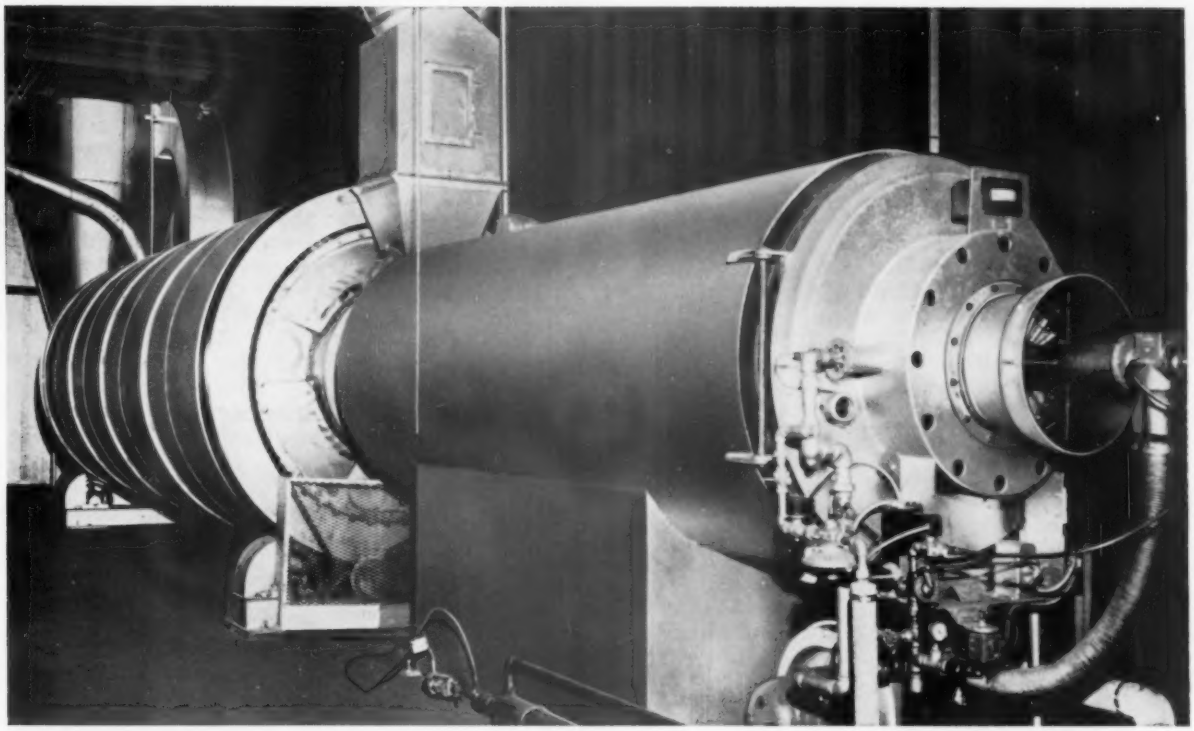

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## *saves money, produces highest quality dried pulp*

Since 1930, Heil dryers have set the pace in the dryer field. Pulp producers especially find they have numerous money-making advantages, such as:

**FAST, HIGH-QUALITY DRYING OF PULP**—Short retention of particles in the exclusive 3-pass drum means short exposure to the drying medium — no harmful effect to pulp. Strength values are quickly restored by a slight beating or refining. Brightness loss is negligible.

**UP TO 95 PERCENT OF MOISTURE REMOVED** — Rapid drying in the compact 3-pass drum helps prevent spoilage of pulp in transit or storage. Fine, light particles stay in the drum for a matter of seconds, while heavier particles remain until desired moisture is removed.

**LOW FUEL COST . . . LOW ORIGINAL PRICE** — The Heil dryer uses less fuel per dry ton than any other machine, due to design features that conserve heat. And it's lower in price than other dryers of equal evaporating capacity.

**LOW OPERATING COST** — Only one operator per shift is needed for a nominal 100-ton-per-day Heil dryer system, thus keeping labor costs at a minimum.

**REQUIRES LESS FLOOR SPACE AND HEAD ROOM** per ton of evaporation capacity than any other machine. Saves installation costs. And if a special dryer house has to be built — you can build a smaller one for a Heil — save here, too!

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*Names of users on request.*

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**MANUFACTURERS OF THE ARNOLD DRYER**

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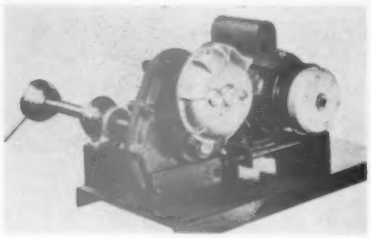
# NEW EQUIPMENT . . .

starts on p. 31 . . . timber loader, with two forks and two upper masts; or pulpwood loader. As a log loader, the unit provides 6,000 lb. lift at ground level, 3,280 lb. at 10 ft. full height. Other features are: two-lever control, 6-second raising time, 60° dump angle, and full height reach of 64 in.—with loader level. Attachments include: ¾-yd. bucket, 6-ft. tilting dozer blade, and hydraulically controlled direction reverser. A 44-in. hydraulic ripper can be used at the rear of the crawler for bulldozing or loading.

*Supplier:* **John Deere & Co., 3300 River Dr., Moline, Ill.**

## Reel winder

**. . . with controlled tension**



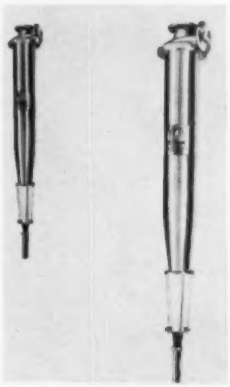
*Applications:* Available in five sizes for winding paper at 3500 rpm through 3.5 rpm.

*Features:* "Reel-Wynders" and winder drives are low cost, simple-construction units. Fluid drive delivers increasing torque and tapered tension over core ratios up to 8 to 1, with process speeds up to 3 to 1. Two controls allow range of tensions and speeds during the operation. Available with U/L approval for explosion-proof requirements, the unit can be adapted to existing and OEM equipment.

*Supplier:* **Fluid Drive Engineering Co., 313 Hibbard Rd., Wilmette, Ill.**

## Baffle head

**. . . prevents air ingress**



*Applications:* Pulp and stock cleaning.

*Features:* Bird "Cycleans" rid air with rejects, including some entranced air in the stock. Self-contained, they require no vacuum rejects and water elutriation systems. Another feature is a sintered ceramic cone at the point most subject to abrasion and wear. After proper size reject opening is determined, tips may be furnished of the same ceramic material. The 7-in. diameter Cyclean has an inlet capacity of 120 gpm and the 12-in. unit a capacity of 500 or 850 gpm.

*Supplier:* **Bird Machine Co., South Walpole, Mass.**

## Scrubber

**. . . for industrial gases**

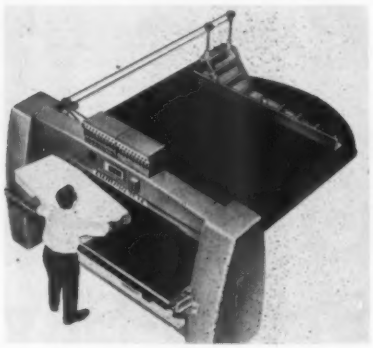
*Applications:* For wet dust collection in kiln, dryer and furnace operations. Scrubber will also reduce gases of extremely high temperature to required level.

*Features:* The "Impinjet" gas scrubber is an impingement-plate scrubber for wet cleaning, absorption and cleaning of industrial gases. It features single or multiple impingement plates. The single-stage scrubber treats dust loadings at inlet up to 100 grains per cubic foot. It removes suspended materials in a gas stream ranging from sub-micron fumes to larger micron dust particles. Liquid consumption is 1 to 3 gallons per 1000 cfm at 20-40 psig. The scrubber has no moving parts. Units can be fitted with round or rectangular casings.

*Supplier:* **W. W. Sly Manufacturing Co., 4700 Train Ave., Cleveland 1, Ohio**

## New trimmer

**. . . has automatic broke removal**



*Application:* Finishing operations.

*Features:* Sliding front table on the "Trimastre" trimmer permits automatic removal of broke created by knife action. During the knifing operation, sliding table automatically creates an opening between the front table and the knife, and broke drops by gravity to the trim removal system. To assure complete broke removal, the table delays before returning to its original position against the knife. On cut sizes, when trimming is not needed, the system would be on "off" position.

*Supplier:* **Smith & Winchester Mfg. Co., South Windham, Conn.**

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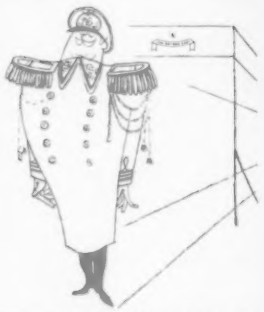

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# . . . LITERATURE

### Web offset printing

is featured in a study by Oxford Paper Co. Aimed primarily at printers, the profile on this rapidly growing industry also will interest papermakers. Features: advantages of web offset, problems, types of papers used, "the ultimate web offset paper," mechanical condition of rolls, paper problems on the press, ink problems related to paper, phenomenon of blistering and drying. Coated paper is the most significant trend in types of papers being used.

*Brochure:* Paper and Web Offset Printing.

*Supplier:* Oxford Paper Co., 230 Park Ave., New York 17, N.Y.

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Units of blow-through type are designed for feeding dry, pulverized and granular materials into high-pressure pneumatic conveying systems with small-diameter lines. Revolver feeders are used with pressure systems of either high- or low-velocity types and are said to provide a more compact unit requiring less head-room. Included are photograph, dimensioned drawings, specifications for all sizes. Eight key dimensions listed for each, in addition to drive motor specifications, line size, weight. For Bulletin F-9 write to Fuller Co., Catasauqua, Pa.

### Motor Protection

Motors subjected to moisture, chemicals, abrasive dust, carbon black and other contaminants may receive added protection and give superior long-term performance by having windings encapsulated during rewinding with RTV (room temperature vulcanizing) silicone rubber. Bulletin CDS-254 lists system's advantages and describes stator encapsulation. Contact General Electric Co., Silicone Products dept., Waterford, N. Y.

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Section 7 (Rolls for the Pulp and Paper Industry) of firm's new catalog is now available. Sandy Hill rolls are standardized for conventional applications. Special needs are met by engineering staff to fulfill specific requirements. Knowledge of particular conditions is vital because manufacturing costs are in direct proportion to exactness of need. Write Sandy Hill Iron & Brass Works (L. G. Gallup), Hudson Falls, N. Y.

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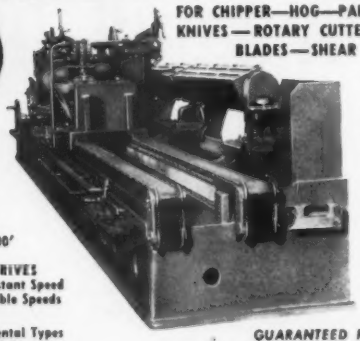
16 — 20 — 24" Diameter



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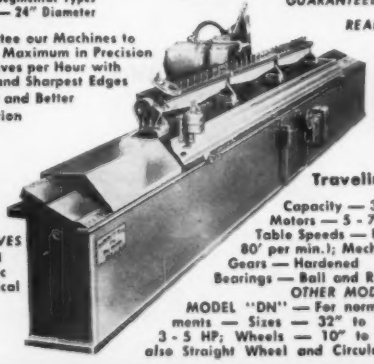

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**TWO GRADUATE ENGINEERS**

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Future growth and development potential requires that candidates be well grounded in the engineering sciences, keen and alert, steady and reliable, and have leadership ability.

Age requirements: 28 to 35 years.
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Confidential inquiries are invited. Reply, detailing education and experience, to D. R. Pichon, Jr., Industrial Relations Division

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Paper men ourselves, and the only recognized professional specialists in the world in our particular field, we assist responsible paper men to accelerate their careers by uncovering and developing **THE SPECIFIC SITUATION** that most exactly fits the needs of each individual served.

If you seek to better yourself, and your performance to date entitles you to our endorsement, we can and will help you. Contact us in absolute confidence for information regarding procedure.

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**TECHNICAL SALES ENGINEERS**

We are seeking several engineers with pulp and paper industry experience interested in Technical Industrial Sales. Position requires sales contacts and engineering for handling systems and heavy equipment in the U. S. and abroad. Knowledge of dry end operations will be helpful. An engineering degree, or its equivalent in experience, plus an interest and ability to work with customers at upper levels of management are basic requisites. Must be willing to relocate to West Coast. Salary commensurate with experience. Resume should include complete personal and professional qualifications, present salary and photograph. Reply Box P-362, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

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# The last word

## Pulp and Paper Research—Seen Through Eyes of a Minister

Pulp and paper industry managerial and technical leaders present at the recent dedication of a research center, expressed surprise and admiration when they heard the invocation.

This was no ordinary one. The keen insight into the real meaning and importance of that much-discussed subject—industrial research—as shown by a little red-headed minister caused several of our readers to suggest that his entire speech be published in PULP & PAPER. So here goes:

"In a situation in which part of the papermaking industry is sharing with the larger part of that industry in the dedication of its research facility, this young Presbyterian minister feels way, way out of place.

"But, being out of place gives me an opportunity to speak out of the place where I am, namely, on the outside looking in.

"Permit me then to make an observation and to address it to both the corporation dedicating its new research center and to this industry sharing in this dedication.

"The outsider sees something that the insider perhaps doesn't see. And that is this: In building this research center, this corporation has made a huge investment *in the public admission that it has not arrived*.

"Or, to put the same thing philosophically, research is an industrial institution's protest against itself, a protest against the deadliest of all institutional sins—the pretension that it has no place to go, nothing better to do, that it has arrived. . . .

### Research . . . a Saving Wound

"That a corporation justifies its research in future profits is an honest thing. That a corporation justifies its research in better service to its industry is an honest thing.

"BUT THAT IT UNDERSTAND ITS RESEARCH AS A SAVING WOUND, A WOUND WITHOUT WHICH IT WOULD DIE, THIS IS A *necessary* THING.

"Industrial history is marked with piles of dusty gray ashes of institutions too proud to understand this.

"I speak out of place, but I speak out of a place that knows more about the life of an institution than any other place. The Church has been in operation some 2,000 years. And could part of the reason be, because it has learned how to keep itself alive. And could part of this lesson be that it needs to establish, maintain, and protect a self-criticism—a criticism against itself? Something, someone, telling it day in and day out that it, the Church, has not arrived?

"Research has been called a necessary luxury or a luxurious necessity with the implication that it doesn't matter which side of the coin you read.

### Research—Your Best Friend

"Be that as it may, there is one luxury that no institution ought allow itself—to bathe in the soft, warm, soapy satisfaction that the best is anywhere but in what is yet to be.

"That luxurious moment may be brilliant and glorious—as the leaves in a Wisconsin autumn are brilliant and glorious—but the fact remains that it is brilliant and glorious only because the chemistry of decay has already completed its work that ushers the death of winter, when last week's glory falls brown and brittle to the ground.

"To the extent that research is permitted to provoke the old with the new, what is with what can be; as it is allowed to gnaw in unrest and agitate the juices of creativity—it can be an institution's best friend.

"The Old Testament writer says in Ecclesiastes—'Faithful are the wounds of a friend.' Your research can be your best friend. As it wounds and keeps raw your institution's inevitable pretention to locate the best short of what is yet to be, research can be your best friend—a most faithful friend.—The REV. ANDERSON D. CLARK, First Presbyterian Church, Beloit, Wis., at dedication of Beloit Iron Works Research Center.

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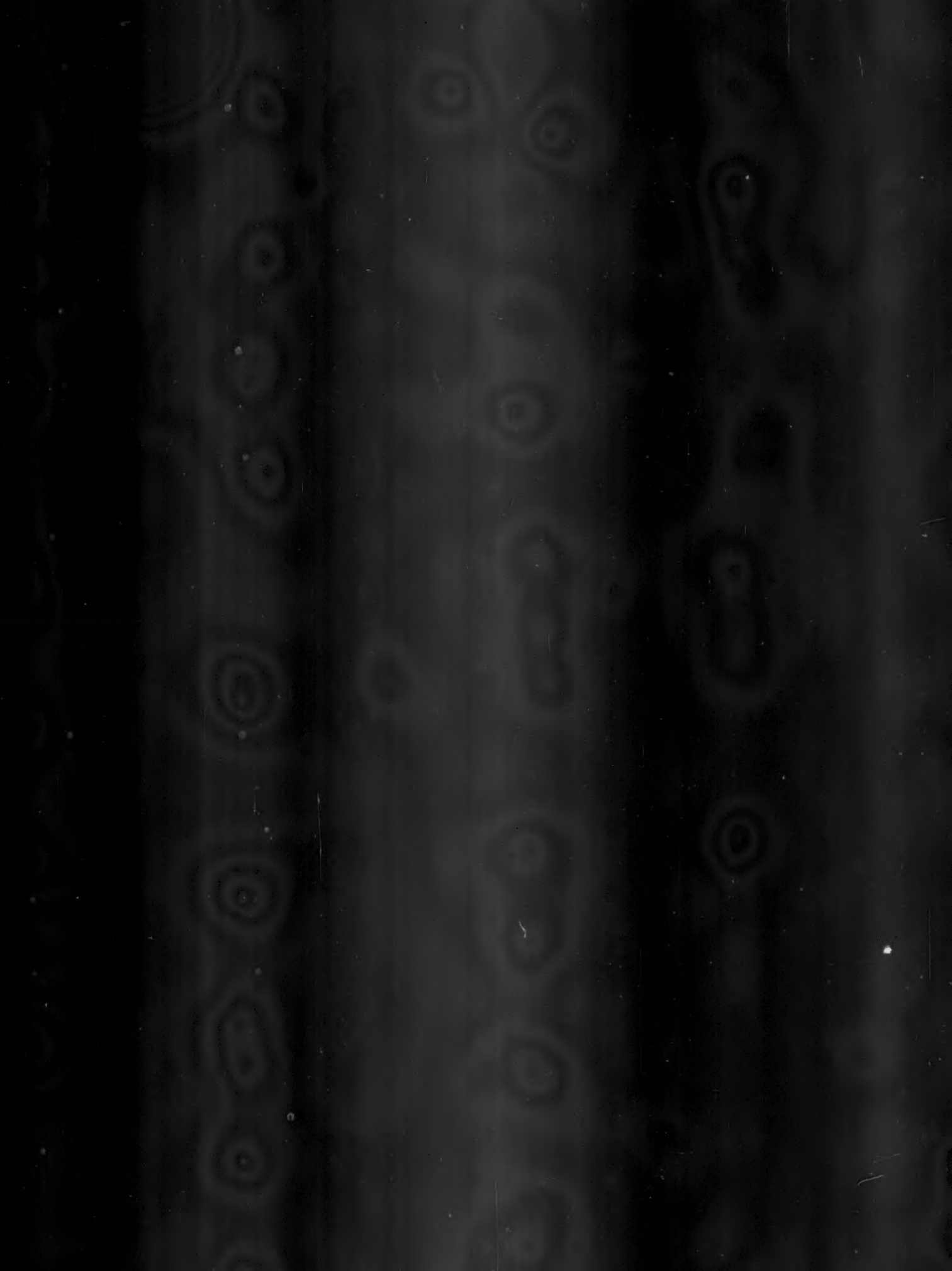
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